

Mucky Marsh Mitigation Site (LRB-2019-00976)

Prepared by:
Ducks Unlimited Inc.
New York In-Lieu Fee Program
LRB-2010-00673 (ILFP)



To be considered by:
United States Army Corps of Engineers
Interagency Review Team Chairs

Buffalo District	New York District
1776 Niagara Street	1 Buffington Street
Buffalo, NY 14207-3199	Watervliet Arsenal

ATTN: CENAN-OP-RU, Bldg. 10
Watervliet, NY 12189-4000

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The Ducks Unlimited (DU) mission focuses on protecting and restoring wetland resources critical to sustaining North America's waterfowl populations. DU utilizes a scientific approach to prioritize its conservation and mitigation activities. At a high-level, conservation priorities are identified by a team of international biologists made up of waterfowl and conservation experts spanning government, academia, and NGO sectors as described in the North American Waterfowl Management Plan (NAWAMP; United States Fish and Wildlife Service 1986, 2012). DU's applied version of this plan, The International Conservation Plan identifies portions of New York as priority landscapes for waterfowl conservation (Ducks Unlimited, 2005, 2019). Furthermore, the northeastern United States and adjacent Canada support an estimated 7.6 million breeding waterfowl, 2.7 million wintering waterfowl, and four to five million migrating waterfowl.

DU established the New York In-Lieu Fee Program (DU-NY ILF Program) to provide a third-party compensatory mitigation option for unavoidable wetland impacts in this priority landscape. DU has developed a suite of GIS-planning tools to aide in the identification of wetland restoration and protection opportunities within these Service Areas following techniques described by Hunter et al. 2012 and Raney and Leopold 2018. DU's top-down prioritization of landscapes and significant wetland features within those landscapes enables DU to identify priority areas for wetland conservation and mitigation activities on a watershed-scale. DU thoroughly evaluated wetland restoration opportunities in the Irondequoit Service Area (SA) (Figure 1) prior to coordinating the selection of this site with the IRT.

This plan describes an approach to provide mitigation at a 93.364-acre "Site" (Mucky Marsh Mitigation Site) protected by Wetlands America Trust (WAT), a fully-owned subsidiary of DU (Figure 2) in the Irondequoit Service Area. The Site is located within a regional priority area for waterfowl conservation, and species of greatest conservation need (e.g.,). This mitigation plan has been prepared and will be implemented by DU in accordance with 33 CFR 332.4, the "U.S. Army Corps of Engineers New York District Compensatory Mitigation Guidelines" and the "Guidelines for Mitigation Banking in Ohio" (currently used by the U.S. Army Corps of Engineers Buffalo District). A Mitigation Plan is submitted for public comment followed by Interagency Review Team review for potential approval.

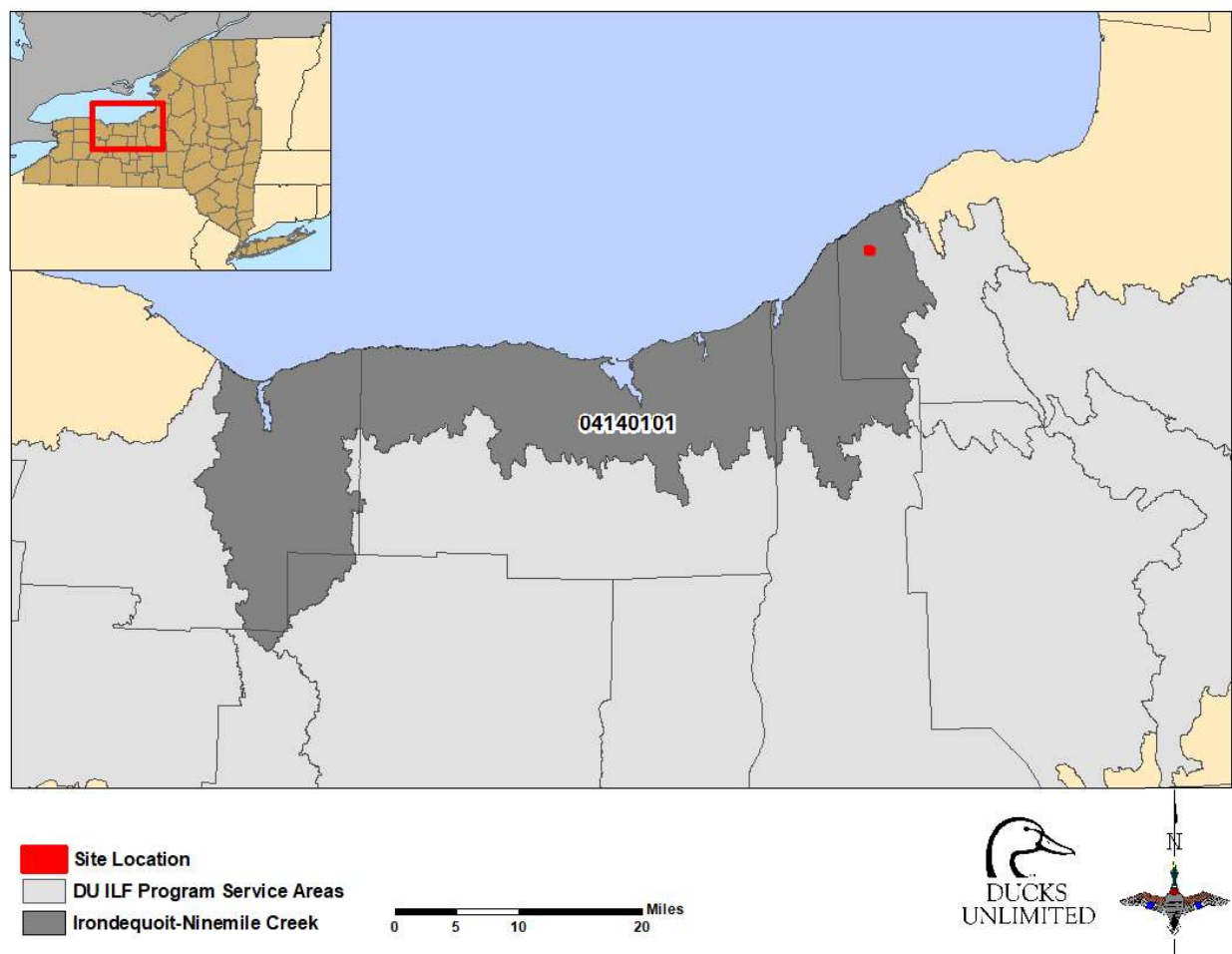


Figure 1 Site Location and Service Area.

Approximate coordinates Latitude: 43.40614°N and Longitude: -76.56551°W. The Site is accessed from a legal right of way that extends to the north along a driveway that meets County Route 20 in Oswego, NY. This Site serves the Irondequoit Service Area, comprised of the 8-digit HUC:04140101.



Figure 2 View of the Site.

The 94.364-acre Site is owned by Wetlands America Trust (WAT). WAT is a wholly owned subsidiary of Ducks Unlimited. Legal access to the property is from the north through a driveway that meets County Route 20 in Oswego, NY. An access/parking area is identified where soils are compacted or include gravel.

1. Introduction and Objectives

The primary goal of the Mucky Marsh Mitigation Site (hereafter: Site) is to provide wetland reestablishment, rehabilitation, enhancement, and preservation to compensate for wetland loss. The Irondequoit Watershed has a high incidence of peatlands and marshes that have suffered from past drainage activities evident when reviewing aerial imagery, including forested and open peatlands that are now regionally uncommon. This project offers an important opportunity to restore now rare wetland types – forested and open peatlands.

More specifically this site provides an opportunity to:

- Replace wetland functions lost at impact sites
- Reestablish wetland acreage for a regionally rare and biologically significant wetland type
- Protect a vernal pool
- Reduce greenhouse emissions through a reduction/elimination of farming activities at the site
- Provide new habitat for wildlife including species of greatest conservation need
- Provide a buffer and improve habitat conditions along Snake Creek stream
- Provide habitat for migratory waterfowl
- Permanently protect the site for conservation purposes

2. Site Selection

2.1 Site Description

The Site is located at Latitude: 43°24'21.88 N and Longitude: -76°33'53.90 W accessed by a driveway from Route 20 in Oswego in Oswego County, New York in the Irondequoit Service Area (8-digit HUC 04140101); on-site parking is located in a graveled area that overlooks the restoration area (Figure 1). This Site is a drained peatland, which based on surrounding features and remnant vegetation was likely a moderately minerotrophic fen (medium fen) (*in sensu* Edinger et al., 2014; NYNHP, 2015; Raney & Leopold, 2018; Sjörs, 1950) (Figure 2). Medium fens have moderate influences from carbonates having pore-water pH of 6.2-6.9, typically are poor in nitrogen and phosphorus and commonly support high densities of rare and threatened species (Bedford et al., 1999; Sjörs, 1950). Nearby medium fens exist in similar topographic settings and provide a high degree of support that this is a drained fen (NYNHP 2015). During site inspections extensive drainage tiling, ditching and the presence of muck soils indicated the site was formerly a wetland. Suitable conditions for reestablishing wetland acreage exist at the site in areas of previously farmed Palms and Carlisle mucks. Several ditches at the site enter Snake Creek through culverts after accumulating flow from lateral tiling. Hydrological conditions are described further in Section 5.2, in the Wetland Delineation Report (Appendix A),

and are shown in the Work Plan (Appendix B). The Site spans 94.364-acres and is presently protected by WAT ownership.

This site was selected because it addresses the threats listed in the DU NY ILF Program Compensation Planning Framework, including fragmentation, conversion to agriculture, invasive species, and the potential to restore a unique wetland community. The wetland mitigation plan takes into consideration priorities identified in the New York State Wildlife Action Plan (SWAP) (NYSDEC, 2015). These include protection and restoration of existing wetlands, the restoration and enhancement of riparian buffers, the control of invasive plant species, and protection and restoration of habitats suitable for species of greatest conservation need. With Snake Creek passing through the site to Lake Ontario, the restoration of wetlands, and stabilization of soils afforded by this project will also provide important benefits to water quality. The Site contains approximately 27.57-acres of drained mucklands, which were farmed for onions prior to protection by DU/WAT. It is suspected this site was formerly a mosaic of forested and emergent peatland – namely a red-maple swamp / mediumly minerotrophic fen complex based on staff review of similar ecological communities (Edinger et al., 2014; Raney, 2014; Raney & Leopold, 2018). Neighboring properties also include former wetland sites in onion production. Protection and restoration of this property will improve water quality within the watershed in close proximity and with hydrological connections to Lake Ontario, as wetlands are particularly effective nutrient sinks (Batiuk et al., 2013; Mitsch & Gosselink, 2000).

The Site already provides breeding and migration habitat for waterfowl species including mallard, wood duck, and common mergansers; habitat is likely to expand / improve through restoration activities. Several species of greatest conservation need (SGCN) identified in the State Wildlife Action Plan (SWAP, NYSDEC, 2015) have been observed at or near this Site. Specifically, the objectives of this plan are to:

- re-establish 5.54 acres of palustrine emergent (PEM) wetlands
- re-habilitate 12.28 acres of palustrine forested (PFO) wetlands/upland buffer Mosaic
- rehabilitate 0.17 acres of PEM wetlands
- rehabilitate 0.31 acres of PSS wetlands
- rehabilitate 0.23 acres of PFO wetlands
- rehabilitate 5.72 acres of upland buffer
- preserve 0.96 acres of PEM wetlands
- preserve 1.23 acres of PFO wetlands
- preserve 51.18 acres of upland buffer
- preserve 4.81 acres of shallow ponds and streams

A total of 94.364 acres will be preserved through this project.

3. Site Protection Instrument

The Site is owned by Wetlands America Trust, Inc. (WAT). WAT, a wholly owned subsidiary of DU, is a non-profit conservation organization that is an Accredited Land Trust. Ownership of the Site by WAT meets the site protection requirements of 332.7(a)(1). Signs shall be erected and maintained that identify the mitigation site for conservation purposes.

DU will transfer ownership to a Long-Term Steward of the property. It is anticipated that Central New York Land Trust (CNYLT) will be the Long-Term Steward. CNYLT has nearby conservation holdings including peatland sites, making them knowledgeable about the types of threats and management concerns that may arise during long-term management of this site. In the event CNYLT is unable to serve as the Long-Term Steward, DU will stand in this role until a Long-Term Steward acceptable to the USACE and IRT is identified. Upon transfer of the property, WAT will retain a perpetual Conservation Easement for the Site in a form approved by the Corps of Engineers. An endowment will be established with funds sufficient to support annual monitoring of the Conservation Easement, and a separate endowment will be established to support Long-Term Stewardship activities identified in the Long-Term Management Plan. Any transfer of the property or transfer of interest in the Mitigation Property from the Sponsor to another party requires IRT consultation and USACE approval. Any such sale or conveyance made without the prior written concurrence of USACE constitutes default and USACE may take action accordingly.

With the exception of activities approved in this Plan and the associated permit affirmations, or activities approved by the USACE, no further alterations to the site shall occur. Prohibited alterations include but are not limited to:

1. **General.** There shall be no future fillings, flooding, excavating, mining, or drilling; no removal of natural materials (soil, sand, gravel, rock, minerals, etc.); no dumping of materials; and no alteration of the topography which would materially affect the Protected Property in any manner, except as authorized by the Permit, ILFP Instrument, Instrument Amendment, and any modifications thereof.
2. **Waters and Wetlands.** In addition to the general restrictions above, within the Protected Property there shall be no draining, dredging, damming, or impounding; no changing the grade or elevation, impairing the flow or circulation of waters, or reducing the reach of waters; and no other discharges or activity requiring a permit under applicable water pollution control laws and regulations, except as authorized by the Permit, ILFP Instrument, Instrument Amendment, and any modifications thereof.
3. **Trees/Vegetation.** On the Protected Property there shall be no clearing, burning, cutting, or destroying of trees or vegetation, except as may be necessary to protect public health or safety or as authorized by the Permit, ILFP Instrument, Instrument Amendment, and any modifications thereof; there shall be no planting or introduction of non-native or exotic species of trees or vegetation.

4. **Uses.** No agricultural, animal husbandry, industrial, residential development, mining, logging, or commercial activity shall be undertaken or allowed on the Protected Property.
5. **Structures.** There shall be no construction, erection, or placement of buildings, billboards, or any other structures, to include fences, parking lots, trailers, mobile homes, camping accommodations, or recreational vehicles, or additions to existing structures, on the Protected Property, except as authorized by the Permit, ILFP Instrument, Instrument Amendment, and any modifications thereof.
6. **New Roads.** There shall be no construction of new roads, trails, or walkways on the Protected Property without the prior written approval (including approval of the manner of construction) of DU, WAT and the USACE.
7. **Utilities.** There shall be no construction or placement of utilities or related facilities (including telecommunications towers and antennas) on the Protected Property without the prior written approval (including approval of the manner of construction) of DU, WAT and the USACE.
8. **Pest Control.** There shall be no application of pesticides or biological controls, including controls of problem vegetation, on the Protected Property without prior written approval (including approval of the manner of application) of DU, WAT and the USACE, or as authorized by the Permit, ILFP Instrument, Instrument Amendment, and any modifications thereof.
9. **Vehicular Use.** There shall be no use of any motorized vehicle or motorized equipment, and no use of any non-motorized bicycle anywhere on the Protected Property, except in the case of emergency, for the purpose of enforcement of applicable laws and regulations, for the purpose of monitoring compliance with the purposes of this Conservation Easement, or as authorized by the Permit, ILFP Instrument, Instrument Amendment, and any modifications thereof.
10. **Subdivision.** There shall be no division or subdivision of the Protected Property.
11. **Other Prohibitions.** Any other use of, or activity on, the Protected Property which is or may become inconsistent with the purposes of the Conservation Easement, the preservation of the Protected Property substantially in its natural condition, or the protection of its environmental systems, is prohibited, except as authorized by the Permit, ILFP Instrument, Instrument Amendment, and any modifications thereof.

DU will also provide funds to the Long-Term Steward for the establishment of a stewardship endowment to be used for long-term monitoring and management of the site according to the long-term management plan (Described further in Section 10).

4. Determination of Credits

The IRT will determine credits based on wetland and upland buffer acres that meet or exceed performance standards, described in Section 8, and the credit ratios of the ILF Instrument as shown in Table 1. The credit generation table will be modified as monitoring provides specific

information on the size and quality of the wetlands being re-established, rehabilitated, and enhanced. Should areas not meet all of the performance criteria described in Section 8 at the end of the 10-year monitoring period, the program sponsor may request more time to achieve goals, or request that the Corps of Engineers consider an appropriate reduction in credit generation, or the Corps of Engineers may require additional monitoring/corrective action at the ILF Site. Deepwater aquatic habitats and/or vegetated shallows will only be credited where they equal 10% or less of the total wetland reestablishment and establishment areas on the site and are part of a well-integrated complex. Deepwater aquatic habitats and vegetated shallows do not meet Corps the definition of wetland and will thereby will not be credited the same as wetlands. Deepwater aquatic habitat is defined as any open water area that is either a) permanently inundated at mean annual water depths >6.6 ft, lacks soil, and/or is either unvegetated or supports only floating or submersed macrophytes, or b) permanently inundated areas ≤6.6 ft in depth that do not support rooted-emergent or woody plant species. Areas ≤6.6 ft mean annual depth that support only submergent aquatic plants are vegetated shallows, not wetlands. Vegetated shallows and/or deep-water habitats over 0.1 acre in size will be mapped in each monitoring report/delineation. It is not anticipated that any such deepwater aquatic habitats will exist at the site.

Table 1 Credit Generation

The program sponsor anticipates the ILF Site will generate between 20 and 25.692 credits based on the following ratios and acreages for each mitigation activity.

Mitigation Activity	Acres	Ratio (Acres:Credits)	Credits Generated
PEM Preservation	0.96	20:1	0.048
PEM Rehabilitation	0.17	4:1	0.043
PEM Reestablishment	5.54	1:1	5.540
PSS Rehabilitation	0.31	4:1	0.078
PSS Reestablishment	1.38	1:1	1.380
PFO Preservation	1.23	20:1	0.062
PFO Rehabilitation	0.23	4:1	0.058
PFO Reestablishment	8.37	1:1	8.370
Upland Buffer Preservation	51.18	8:1	6.398
Upland Buffer Rehabilitation	5.72	4:1	1.430
PFO/Upland Buffer Mosaic Rehabilitation	12.28	6:1	2.047
Preservation of Pond, stream, and open water	4.81	20:1	0.241
Total	92.18		25.692

In order for the performance standard to be met, re-established and rehabilitated wetlands must have a VIBI-FQ of 40. Four baseline VIBI-FQ plots were established and plant diversity

recorded in representative areas in upland fields, forested uplands, forested wetlands, and drained muck fields as shown in baseline conditions in Appendix B. Upland Field (VIBI 1) scored 9.74, drained wetland field (VIBI 2) scored 16.6, existed forested wetlands (VIBI 3) had a score of 63.14, and upland woods (VIBI 4) scored 65.03 (Locations are provided in Appendix A). This indicated diverse vegetation in the more intact communities on site and lower scores in recently farmed areas – based on these results, we anticipate an ecological lift will be achieved with the restoration of hydrology, implementation of invasive species control, and the planting plan in accordance with Ohio Wetland Mitigation Guidelines specifications. Seed mixes with a FQAI score >50 will be used to reestablish wetland vegetation in all wetland areas (Table 3).

Mitigation credit ratios provided below follow rates established in the DU-NY-ILF Program Instrument and Guidelines for Mitigation Banking in Ohio. we propose a 1:1 credit ratio for re-established wetlands and 4:1 for rehabilitation of wetlands. Rehabilitation occurs where both hydrologic and plant community improvements are being made to an existing wetland. Since neither the instrument nor Guidelines for Banking in Ohio explicitly address credit ratios for well-drained mucklands, we propose a 3:1 ratio for rehabilitation of a large PFO/Upland Buffer mosaic. We expect that $\geq 40\%$ of this area as shown the credit generation plan will become rehydrated following construction activities. A 3:1 ratio is requested to reflect the underlying costs of establishing trees, in addition to the site preparation (excavation) that will be used to reestablish microtopography throughout this area. If the percentage of mosaic established as a wetland varies substantially from this estimate ($\pm 10\%$), the Sponsor may request an adjustment to credit ratio to reflect greater or lower extent of wetlands. Microtopography in the upland buffer/ mosaic area is expected to serve multiple functions: slowing overland flow, creating depressions for water to collect, and creating pockets where the water table is closer to the surface. DU is requesting a 20:1 ratio for preservation of existing wetlands on site, existing wetlands had high VIBI scores, and also include a small vernal pool that is an important habitat for breeding amphibians. DU requests a 20:1 ratio for preservation of standing and open water habitats. These areas are important to migratory waterfowl which are already using the site (e.g., wood ducks, mallards, Canada geese). DU proposes an 8:1 ratio for preservation of existing upland buffers, and a 4:1 for buffer rehabilitation. Logging and deforestation of wetlands for both timber harvest and expansion of agricultural production are common threats to resources in this watershed. Additionally, a burgeoning solar industry stands to add additional pressure to aquatic resources and highlights the need for protections.

Provided that preservation is documented (conservation easement has been recorded), and financial assurances are in place the credit release schedule will include:

- All of the credits associated with the preservation will be released upon approval of this Instrument Amendment, recordation of the conservation easement, and execution of financial assurances.
- 10% of the credits for re-establishment will be released upon approval of the Instrument Amendment.
- 20% of the credits for re-establishment will be released at completion of planting and approval of the as-built drawing by the IRT.
- 15% of the credits for re-establishment will be released after meeting all of the components of the first interim goal.
- 15% of the credits for re-establishment will be released after meeting all of the components of the second interim goal.
- 15% of the credits for re-establishment will be released after meeting all of the components of the third interim goal.
- 25% of the credits for re-establishment will be released after the final performance standards have been met for the 10-year monitoring period, provided a USACE approved long-term management plan and conservation easement have been executed and funded, and all other obligations and performance standards set forth in the instrument amendment and permit have been met.

5. Baseline Ecological Characteristics

5.1 Historic and Existing Plant Communities, Including Wetlands

The Site is a drained peatland that has a history of use as agricultural land dating back to at least the 1960's. The site has an extensive ditch network and Snake Creek has been channelized through the middle of the property flowing South to North to further dewater the site for agricultural production. Vegetation communities were surveyed between June 2020 and September 2020, and are further described in the wetland delineation report in Appendix A. Here we provide a brief summary of the plant communities and provide photographs of current site conditions. The drained muckland fields are dominated by upland species including ragweed (*Ambrosia artemisiifolia*), red clover (*Trifolium pratense*), and other early successional weeds. Emergent wetlands within the agricultural fields are dominated by the early successional, nut sedge (*Cyperus esculentus*), a species of disturbed habitats that is normally outcompeted in more established wetlands. The forested wetlands (W-F) in the Southeast corner of the property are dominated by red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanica*), royal fern (*Osmunda regalis*), lizard's tail (*Saururus cernuus*), common spicebush (*Lindera benzoin*) and other hydrophytes.

Mucky Marsh Photographs



This is the channelized section of Snake Creek that runs through the middle of the property. July 2019.



Looking east over the muck field that had been recently tilled. The dark soil is rich muck that is ideal for planting onions. July 2019.



Looking across Snake Creek towards the western field. Onions can be seen growing on the site. July 2019. This side is well-drained.



This ditch flows east to west, draining the eastern field into Snake Creek. July 2019. The eastern field is wetter.



The eastern field washed out in 2019, destroying the onion crop. The ground was still wet, as evidenced by the deep tractor ruts visible in this picture. July 2019.



The same eastern field in August of 2020 under drier conditions. The site was mowed to facilitate a topographic survey.



The property also has 2 small forested ponds. Wood ducks, mallards, and Canada geese were seen using them. June 2019.

Cultural Resources

A request for a cultural and historic resources review was submitted to the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) and a response was received. According to (OPRHP), no cultural resources will be affected by the wetland mitigation activities (Appendix C).

5.2 Site Land Use History, Including Structures

There are no structures on the property. From a review of aerial photography dating back to 1960, fields within the Site have been continuously maintained for agricultural production until the time of acquisition Figure 3. Historic aeriels match with oral history obtained for the site, that subsurface ditches and tiling on the Western Side of the Snake Creek had been reconfigured several times. Some open ditches were no longer present in the 2020's. On-site reviews in June and September 2020 provided evidence of previous hydrological modifications, including ditching and tile drainage, which are apparent in soil conditions and drainage on site. Much of the Site's cropland areas appear to have historically supported more extensive wetlands prior to drainage and tillage activities. The fields were last planted to onions in 2019, and much of that crop was lost to flooding from two flash flooding events. There are no known hazardous material sites located on or within the vicinity of the Site.

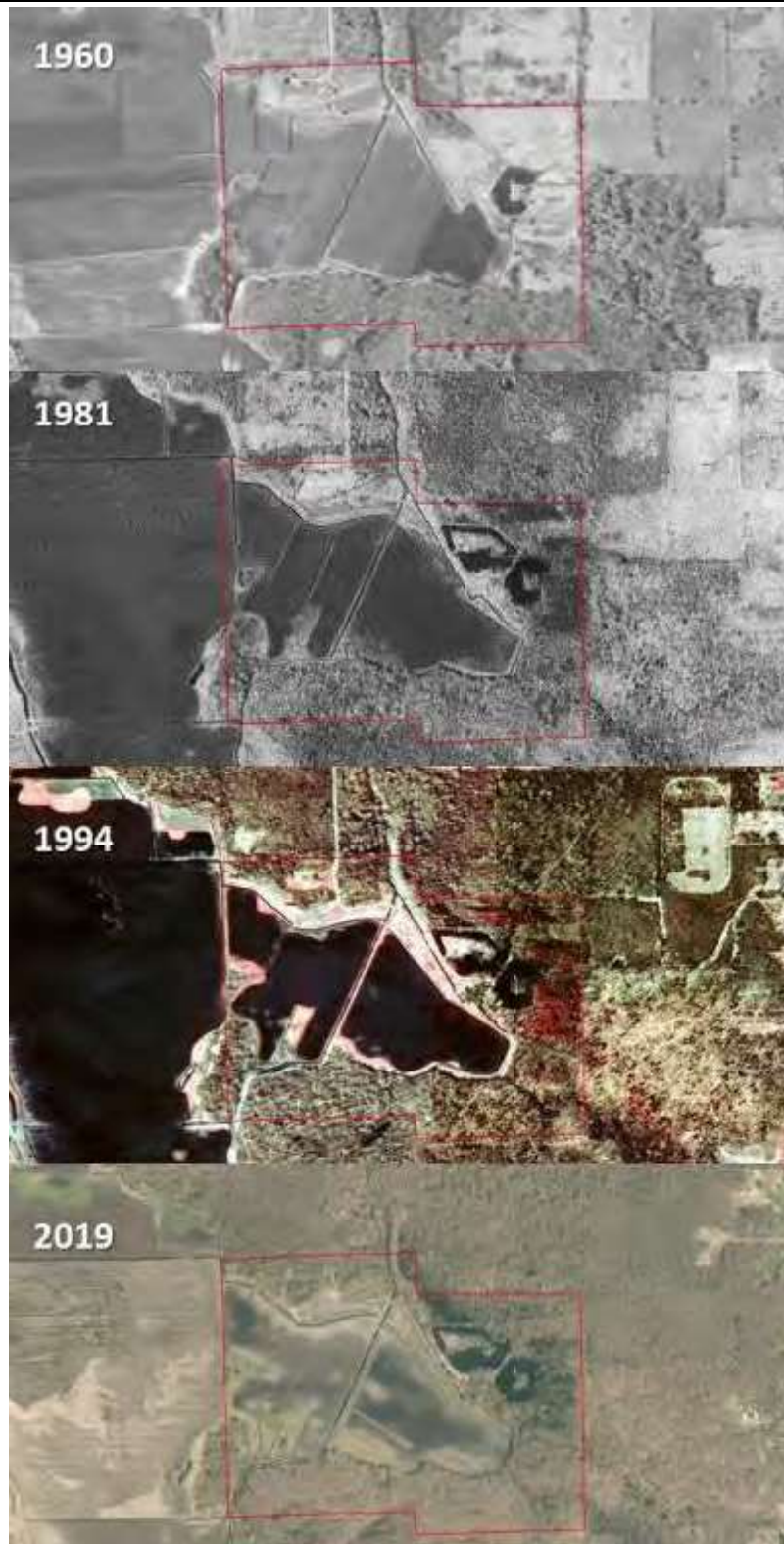


Figure 3 Historical Aerial Photos of Mucky Marsh.

The property has been in agricultural landuse dating back until at least 1960. The Site was actively worked as an onion farm through 2019. The site was mowed in 2020 prior to delineations.

5.3 Soil Descriptions

Based on the Soil Survey of Oswego County, New York (USDA Official Soil Series Descriptions) the soil series mapped on-site include Carlisle (Ce) and Palms Mucks (Pa), Ira gravelly fine sandy loam (IrB) Scriba gravelly fine sandy loam 0-8% (ScB), Scriba gravelly fine sandy loam, 8 to 15 % (ScC), Sun loams (Su), Lamson very fine sandy loam (Lf). Restoration work will occur primarily in Palms and Carlisle mucks. A soils map is provided in Figure 4. Soil conditions in the field appear to conform to the mapped soil series. Additionally, soil borings were taken throughout areas potentially suitable for restoration work.

Ce-Carlisle muck. This very poorly drained soil formed in organic deposits derived from well decomposed woody and herbaceous plant material. It is mostly in low bogs that are between drumlin-like hills or kames. It is mainly in the western half of the county. The areas commonly are elongated in shape and are mostly oriented in a northwesterly direction. Some areas are 2 or 3 acres in size, and some range to as much as 300 acres in size. Included with this soil in mapping are a few areas of the shallower Palms muck and small island-like areas of mineral soils, for example, Phelps and Ira soils. Also included are small areas of sedimentary peat (coprogenous earth).

IrB - Ira gravelly fine sandy loam, 3 to 8 percent slopes. This gently sloping soil has the profile described as representative for the series. It is on the convex tops of elongated hills and in irregularly shaped, undulating areas on till plains. Individual areas are mainly 5 to 50 acres in size. Included with this soil in mapping are the somewhat poorly drained Scriba soils in small wet spots and drainageways. Also included are a few areas of the well-drained Sodus soils on small sloping knolls and small spots of the moderately well drained, silty Williamson soils that are free of coarse fragments. This soil is suited to many of the field crops commonly grown in the county. In some years planting is delayed early in spring by temporary seasonal wetness and the presence of included wet spots. Coarse fragments and a few surface stones may interfere with the operation of precision tillage equipment. If cultivated crops are planted, the hazard of erosion is moderate. Erosion can be controlled by the use of cross slope tillage, strip cropping, and diversion ditches. Randomly placed drains for wet spots and interceptor drains to divert surface runoff and subsurface seepage are beneficial in some areas. This soil does not generally respond well to a patterned system of subsurface drainage. Because the fragipan restricts root penetration, draughtiness is a slight problem in some years. Slow permeability in the fragipan and substratum and temporary seasonal wetness are the main limitations for nonfarm uses.

Lf-Lamson very fine sandy loam. This is a nearly level soil that formed in glaciolacustrine deposits that consist mainly of very fine sand and fine sand. It is in flats and depressions. Slopes range from 0 to 3 percent. Some areas are broad and nearly circular and are as much as 100 acres in size, and some are long and narrow and are mainly 10 to 50 acres in size. A few acres at the edge of organic deposits are very narrow. Included with this soil in mapping are areas of the somewhat poorly drained Minoa soils on knolls, benches, and low ridges. Some areas of soils that have a surface layer of mucky very fine sandy loam and a few small areas of Palms soils in places where organic deposits are more than 16 inches thick are also included. Prolonged wetness is the main limitation to the use of this soil for farming. If undrained, this soil is suited to water-tolerant pasture plants and trees. If adequate outlets are available, this soil responds well to subsurface drainage. Drainage outlets are difficult to locate in some places, however, because of the low position of this soil on the landscape. Special practices, for example, the use of

wrapped joints or filters, are needed in places to prevent sand from plugging drains. If properly drained, this soil is well suited to field crops and some vegetable crops. It is free of coarse fragments. Management practices that include minimum tillage and use of cover crops help to maintain good soil tilth and a high content of organic matter. In drained areas this soil has excellent response to applications of fertilizer. Prolonged wetness is the main limitation to most non-farm uses of this soil. During the installation of underground utilities, sidewalls of excavations are unstable because the soil is saturated with water.

Pa-Palms muck. This is a level soil that formed in decomposed, herbaceous organic deposits underlain by loamy mineral soil deposits. Slopes are mainly less than 1 percent but are 2 percent in a few areas. This soil is in low depressions and bogs. Some areas are small and circular, and others are broad and elongated in shape. Individual areas are mainly 4 to 50 acres in size. Included with this soil in mapping are a few small areas of Carlisle soils in the deepest part of bogs. Also included are a few fringe areas of soils that have organic deposits less than 16 inches thick and some areas of soils that are underlain by very stony glacial till. Soils that have a firm, platy traffic pan in the subsurface layer are commonly included in intensely cultivated areas. Small areas of coprogenous earth in places where organic deposits adjoin deposits of mineral soil material are also included. If drained, this soil is well suited to vegetable crops and root crops (fig. 9). Drainage is not feasible in many areas because of the lack of good outlets and the relatively thin organic deposits. Where the organic deposits are mainly less than 36 inches thick, this soil has a relatively short productive life because of subsidence and oxidation of the organic material after the soil is drained. If drainage is practical, tile drains function well, even in the mineral soil substratum. Lift pumps are needed in some places where outlets are not available or where substantial subsidence has occurred. Excessive tillage accelerates oxidation and causes traffic pans to form. The hazard of soil blowing can be controlled by the use of windbreaks and cover crops. In undrained areas, the natural vegetation provides cover for wildlife, but timber production is poor.


ScB-Scriba gravelly fine sandy loam, 0 to 8 percent slopes. This nearly level to gently sloping soil has the profile described as representative for the series. It is on the top and lower side of elongated hills, on concave foot slopes, and in moderately low flats on till plains. The areas are variable in shape and are mainly 5 to 50 acres in size. Included with this soil in mapping are small areas of the moderately well drained Ira soils in a position slightly higher on the landscape than this Scriba soil. Also included are poorly drained and very poorly drained Sun soils in small depressions, drainageways, and low areas. Small areas of silty Raynham soils and gravelly Fredon soils are in places where lake deposits and outwash deposits adjoin the till plains. Small areas of Palms muck in swamps are also included. This soil is not well suited to most field crops because of seasonal wetness early in the growing season and lack of moisture in dry periods later in the growing season. Unless drained, it is only moderately well suited to hay and pasture crops. If this soil is used for field crops, installation of surface and subsurface drains generally is beneficial. Interceptor drains can be used in many areas to divert runoff and subsurface seepage from higher adjacent soils. Small stone piles and stone hedges are scattered throughout many fields. They were made when the fields were cleared of surface stones, and in some places they hinder the operation of farm equipment. Use of cover crops, return of crop residue to the soil, and including sod crops in the cropping system are important practices that maintain good soil tilth. Seasonal wetness, slow permeability in the fragipan and substratum, and the presence of small coarse fragments are limitations for many nonfarm uses.

ScC-Scriba gravelly fine sandy loam, 8 to 15 percent slopes. This sloping soil has a profile similar to the one described as representative for the series, except the depth to the fragipan is slightly less. It is on lower side slopes and foot slopes of elongated hills. It receives run-off from higher, adjacent soils. Individual areas are mainly 5 to 30 acres in size. Included with this soil in mapping are small areas of the poorly drained and very poorly drained Sun soils in drainageways and on toeslopes. Also included are small areas of the moderately well drained Ira soils and very small areas of the well-drained Sodus soils in convex positions that are slightly higher on the landscape than this Scriba soil. This soil has potential for some crops commonly grown in the county, but slope, hazard of erosion, and seasonal wetness are limitations. This soil is generally better suited to hay or pasture crops than to cultivated crops. Erosion is a severe hazard in cultivated areas. Cross slope tillage, strip cropping, and use of diversion ditches and grassed waterways are practices that are needed to control erosion. Minimum tillage, use of cover crops, and return of crop residue to the soil also help to protect the soil from erosion and to promote good soil tilth. Interceptor drains are commonly needed to divert runoff and sub-surface seepage from higher soils. Randomly placed drains for wet spots improve many fields. Midsummer droughtiness is a hazard, because roots are restricted by the fragipan. Seasonal wetness, slope, and slow permeability in the fragipan are the main limitations for most nonfarm uses.

SgC-Sodus gravelly fine sandy loam, 8 to 15 percent slopes. This sloping soil has the profile described as representative for the series. It is on the convex upper sides of long, drumlin-like hills and ridges that are oriented roughly in a north-south direction. Individual areas are elongated in shape and are mainly 5 to 35 acres in size. Included with this soil in mapping are the moderately well drained Ira soils and the somewhat poorly drained Scriba soils in a position slightly lower on the landscape than this Sodus soil and along narrow drainageways. Also included are small areas of the more-gravelly Hinckley and Alton soils on terraces and beaches. Piles of stones and stone hedges and fences that form field boundaries are also included. This soil is suited to some of the field crops commonly grown in the county. In a few large areas bordering Lake Ontario, it has potential for fruit trees. The use of this soil is somewhat limited by slope and the fragipan. If row crops are grown, practices to control erosion should include cross slope tillage, strip cropping, use of diversion, and including sod crops in the cropping system. Minimum tillage, use of cover crops, and return of crop residue to the soil also help to reduce erosion and to promote good soil tilth. Because the fragipan restricts rooting, droughtiness is a problem in midsummer in some years. Coarse fragments and slope slightly hinder operation of some farm machinery. Randomly placed drains for wet spots benefit some fields. Slope, slow permeability in the fragipan and sub-stratum, and the presence of coarse fragments are limitations for many nonfarm uses.

Su-Sun loam. This is a nearly level soil that formed in firm glacial till. It is on concave toeslopes between drumlinlike hills, in depressions and low broad flats, and along drainageways. It receives runoff from higher, adjacent soils. Slopes range from 0 to 3 percent. Many areas are long and narrow, and some areas are oblong in shape. Individual areas are mainly 5 to 20 acres in size. Included with this soil in mapping are small areas of the somewhat poorly drained Scriba soils on slightly elevated rises. Small swampy areas of Palms muck in deeper depressions and some areas of stony soils are also included.



 Property 94.364-acres

0 125 250 500 Feet



Figure 4 Soils Map.

Restoration activities will occur primarily in Carlisle muck (Ce) and Palms muck (Pa).



August 26, 2020 shows exposed marl, peat and muck soils exposed on the neighboring parcel to the West where an agricultural operation placed overburden from a ditch near the Western Property boundary of the mitigation site.



Aug. 26, 2020. Peat soils. Similar soils exist in the project site and are excellent candidates for hydrological restoration.

5.4 Animal and Plant Species Including Endangered Species

While no federally listed species were observed during site visits, forested portions of the site potentially contain roosting habitat for northern long-eared bat (*Myotis septentrionalis*) (Appendix D). DU will consult with the USFWS to ensure that this project will not negatively affect any listed species that may be present. DU will not cut any trees as part of this project as it might have an adverse impact on bat species. We anticipate that the restored wetlands and upland forest will improve foraging and roosting opportunities for bat species present at the site. A full list of species observed at the property is provided in Table 2.

Table 2 Wildlife and Plant Species Identified

Species	Common Name	Conservation status	Notes
Birds			
<i>Accipiter cooperii</i>	Cooper's hawk		
<i>Agelaius phoeniceus</i>	red-winged blackbird		
<i>Aix sponsa</i>	wood duck		
<i>Anas platyrhynchos</i>	mallard		
<i>Ardea herodias</i>	great blue heron		
<i>Branta canadensis</i>	Canada goose		
<i>Corvus brachyrhynchos</i>	American crow		
<i>Cyanocitta cristata</i>	blue jay		
<i>Falco sparverius</i>	American kestrel		
<i>Lophodytes cucullatus</i>	hooded merganser		
<i>Meleagris gallopavo</i>	wild turkey		
<i>Pheucticus ludovicianus</i>	common grosbeak		
<i>Poecile atricapillus</i>	black-capped chickadee		
<i>Setophaga petechia</i>	Yellow warbler		
<i>Setophaga ruticilla</i>	American redstart		
<i>Spinus tristis</i>	American goldfinch		
<i>Turdus migratorius</i>	American robin		
<i>Tyrannus tyrannus</i>	eastern kingbird		
<i>Zenaida macroura</i>	mourning dove		
Reptiles and Amphibians			
<i>Chrysemys picta</i>	painted turtle		
<i>Dryophytes versicolor</i>	grey treefrog		
<i>Lithobates catesbeianus</i>	bullfrog		
<i>Lithobates clamitans</i>	green frog		
<i>Lithobates pipiens</i>	leopard frog		
<i>Plethodon cinereus</i>	red-backed salamander		
<i>Plethodon glutinosus</i>	slimy salamander		
Mammals			
<i>Canis latrans</i>	coyote		
<i>Castor canadensis</i>	North American beaver		
<i>Didelphis virginiana</i>	Virginia opossum		
<i>Odocoileus virginianus</i>	white-tailed deer		
<i>Procyon lotor</i>	raccoon		
<i>Sciurus carolinensis</i>	eastern gray squirrel		
<i>Tamias striatus</i>	eastern chipmunk		

Plants

Species	Common Name	Conservation status	Notes
<i>Acer rubrum</i>	red maple		
<i>Acer saccharum</i>	sugar maple		
<i>Achillea millefolium</i>	yarrow		
<i>Alliaria petiolata</i>	garlic mustard	invasive	
<i>Anemone canadensis</i>	wood anemone		
<i>Asclepias syriaca</i>	common milkweed		
<i>Apocynum cannabinum</i>	Indian hemp		
<i>Carex granularis</i>	limestone sedge		
<i>Carex flava</i>	yellow sedge		
<i>Cornus amomum</i>	silky dogwood		
<i>Cornus racemosa</i>	gray dogwood		
<i>Cornus sericea</i>	red stemmed dogwood		
<i>Cyperinus esculentus</i>	yellow nutsedge	invasive	early successional
<i>Daucus carota</i>	wild carrot		
<i>Equisetum arvense</i>	horsetail		
<i>Fagus grandifolia</i>	American beech		
<i>Fragaria vesca</i>	wild strawberry		
<i>Galium</i> spp.	bedstraw		
<i>Impatiens capensis</i>	spotted jewelweed		
<i>Leucanthemum vulgare</i>	oxeye daisy		
<i>Lobelia cardinalis</i>	cardinal flower		
<i>Lycopus uniflora</i>	water horehound		
<i>Lythrum salicaria</i>	purple loosestrife	invasive	infrequent at site
<i>Oenothera perennis</i>	little evening primrose		
<i>Onoclea sensibilis</i>	sensitive fern		
<i>Parthenocissus quinquefolia</i>	Virginia creeper		
<i>Phalaris arundinacea</i>	reed canary grass	invasive	infrequent at site
<i>Phleum pratense</i>	common timothy		
<i>Poa</i> sp.	grass species		
<i>Polygonum pennsylvanicum</i>	Pennsylvania smartweed		
<i>Potentilla simplex</i>	common cinquefoil		
<i>Prunus serotina</i>	black cherry		
<i>Rhus toxicodendron</i>	poison ivy		
<i>Salix</i> spp.	willow		
<i>Saururus cernuus</i>	lizard's tail		
<i>Scirpus cyperinus</i>	woolgrass		
<i>Sisyrinchium montanum</i>	blue eyed grass		
<i>Solanum dulcamara</i>	nightshade		
<i>Solidago canadensis</i>	Canada goldenrod		

Species	Common Name	Conservation status	Notes
<i>Thelypteris palustris</i>	marsh fern		
<i>Tilia americana</i>	American basswood		
<i>Trifolium pratense</i>	red clover		
<i>Trifolium repens</i>	white clover		
<i>Verbascum thapsus</i>	common mullein		
<i>Vernica officinalis</i>	common speedwell		
<i>Vicia sativa</i>	garden vetch		
<i>Viola canadensis</i>	Canada violet		
<i>Vitis riparia</i>	river grape		

6. Mitigation Work Plan

6.1 Geographic Boundaries

The geographic boundaries of the Site correspond to the 94.364-acre area to be placed under a conservation easement (red-line) as depicted in Figure 2, and in Appendix F. The Site lies to the South of Oswego of Route 20 in the town of Oswego, NY. A small area, excluded from the credit production, will serve as parking (Figure 2).

6.2 Sources of Water, Connections to Existing Waters and Upland Runoff

Snake Creek flows South to North through the center of the property and has been channelized from past agricultural activity. The channelized stream is approximately 7 feet deep. Past agricultural activity resulted in the creation of several ditches that are fed by a network of tile-line and drain into Snake Creek.

Existing wetland features have been identified through an on-site delineation, this report can be found in Appendix A. Four groundwater monitoring wells were installed at the Site in October 2020. The well locations are shown in Appendix B and data from the wells are shown in Figure 5. The data from the wells indicated that ground water levels approached the surface only at well location 4 and is consistent with a site that has been effectively dewatered for onion production. These wells will serve the function of documenting baseline vs. post-restoration water level elevations. The site characteristics and data collected support the plan to utilize a combination of drain tile disruption, grading, to restore and maintain wetland hydrology for longer periods during the growing season. It is anticipated that the hydroperiod in the wetland rehabilitation areas will increase by 20 to 30% during the growing season.

Agricultural ditches flow from the from the neighboring muckland property to the West through into Snake Creek on the Site. DU is aware of no legal mandates nor agreements that require DU to maintain flow through the ditches or Snake Creek. The neighboring Muck Farm purchased their property with knowledge that DU had acquired the Site for the purpose of hydrologic restoration prior to their acquisition. However, to minimize any potential for conflict over hydrology, namely the perception the Site could actively back up water on the neighboring property, DU has installed pre-construction monitoring wells in the field to the West of Snake Creek within the Site. DU has also taken steps to ensure that this project will not actively impede hydrologic flows from neighboring properties through the Site. DU has been intentional in the design of this project to take steps to avoid any direct manipulation of Snake Creek, i.e., no blockages of flow are occurring for Snake Creek or ditches from the West. During construction activities, side slopes will be laid back on the main W-E ditch running perpendicular to Snake Creek as well as on Snake Creek, to reduce opportunities for bank sloughing.

DU may contemplate entering a reciprocal Site Access and Flowage Easement (SAFE) with the neighboring muck farm property owner to the West of the Site for the West-East as depicted by the Access / No Credit area in Figure 2. While this potential SAFE does not appear to be explicitly necessary to ensure the success of the Site, nor required of DU, if executed, the agreement would enable the neighboring landowner some rights to maintain flows of the West-East ditch depicted in Appendix A to ensure positive relations. Any such agreement would be subject to USACE, WAT, and DU approval prior to execution.

A flow easement for that specific ditch would not have an effect on the performance of the Site, as the associated ditch enters Snake Creek hydrologically downstream from the restoration area. It is DU's belief that such an agreement is not necessary to the success of the project nor legally necessary for the Sponsor, but may improve neighbor relations, nonetheless.

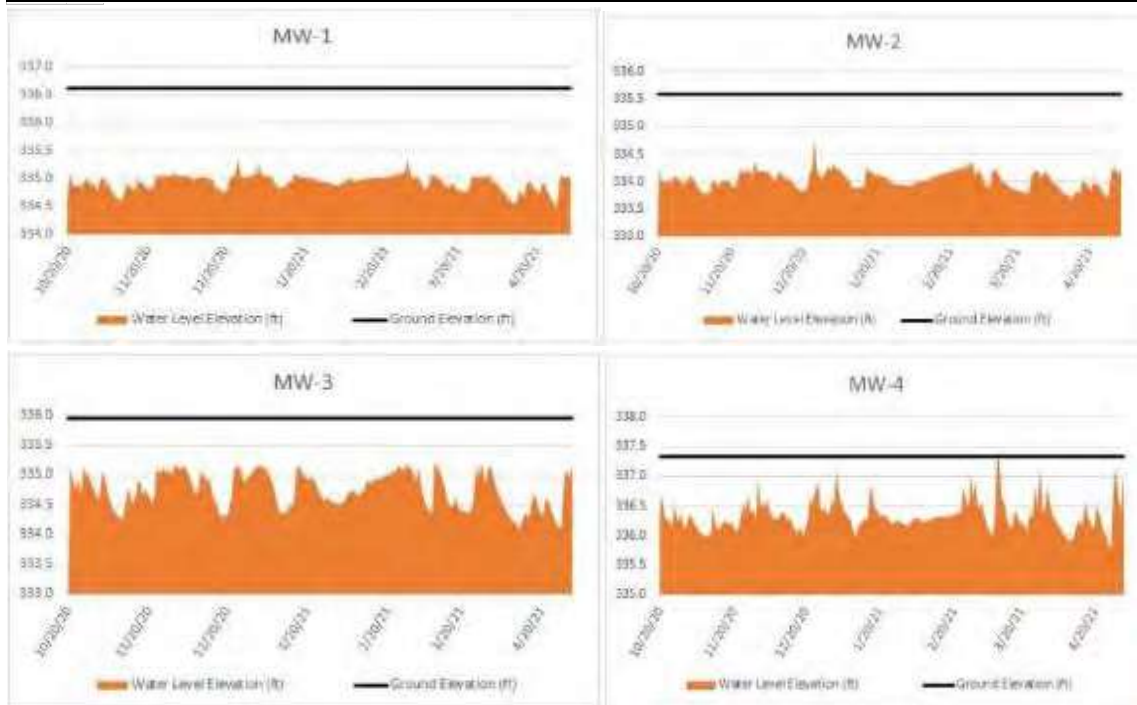


Figure 5 Ground Water Data.

Groundwater data is shown from October 2020 to May 2021. The water-table was often observed within 18" of the surface from fall through spring. Dry conditions in 2020, combined with existing drain tile likely prevented groundwater levels from being closer to the surface.

6.3 Invasive Species

Invasive species are infrequent at the site and were restricted to purple loosestrife and reed canary grass. DU estimates these species cover <2% of the site. Invasive species will be treated with an aquatic-safe herbicide upon plan approval. Purple loosestrife is restricted to ditches. DU will continue to monitor invasive species cover prior to construction, and if necessary, may incorporate preemptive control measures into construction activities if warranted. Following construction activities, DU staff will monitor and adaptively manage invasive species on the property through hand pulling, mechanical removal, and through application of herbicide in accordance with all state and federal regulations. As the site develops, spot herbicide applications may be necessary. Other appropriate methods for control will be evaluated as invasive species are encountered. Long-term tasks will include routine inspections in early summer (late June through mid-July) to determine invasive species presence or absence, and abundance. DU will perform regular, routine monitoring of invasive plants during site monitoring visits typically five to six visits occur every growing season. The performance standards to be met for invasive species are listed in Sections 8.

6.4 Construction Methods, Timing and Sequencing

Construction of the project will occur as soon as practicable after approval of this mitigation plan. Final earthwork adjustments and site planting will occur no later than June 30 of the year following the date of plan approval, or by an approved extension date. To reduce the chance for hydrological impacts on neighboring properties, the hydrological restoration plan developed focuses on activities that will not impede flow from Snake Creek, nor ditches feeding it from the West. Side slopes will be laid back on the main E-W ditch running perpendicular to Snake Creek, as well as the stretch of Snake Creek running through the Site interior. This approach will reduce the potential for self-plugging of the Creek. DU is aware of no regulations or claims that require continued maintenance Snake Creek nor its tributaries to maintain negative flows through the site, but has taken steps to minimize the potential for water to back up on neighboring properties. Most of the hydrological restoration at this site is focused on the eastern portion of the muckfields at the site, where more extensive tile-disruption, grading, and culvert removal is focused.

In an attempt to maximize benefits to the resource, reestablishment of pit-mound microtopography is proposed for the Western muck field at the site and will target retaining surface water on site and impeding surface flows to target the production of PFO-Upland Mosaic at the site. This approach based on topographic surveys will not directly place water on neighboring properties. Planned wetland areas shown in Appendix B that are undisturbed by construction activities will be roughly disked to reintroduce microtopography, and to prepare areas of likely reversion for seeding of wetland plant species. Soils will be left loose to facilitate wetland plant establishment.

Seeding will begin as soon as the earthwork is completed. All reestablished and rehabilitated wetland areas will receive the wetland seed mix. Any disturbed upland areas will be stabilized with the standard upland seed mix; including all access roads. The PSS, PFO, and upland buffer areas specified in the planting plan (Appendix B) will be planted to the species mixes specified in Table 3. Herbaceous wetland species will be seeded immediately following construction, however woody plantings may be delayed as necessary in order to establish plants during an optimum time of year, which is typically in the fall or early spring. Woody planting will occur no later than June 30 of the year following construction.

6.5 Grading Plan, Including Elevations and Slopes of Substrate

The grading operations with finished elevations are shown in the plan and profile pages of Appendix B. These include tile drain exploration and removal, scrapes, and installation of spillways to facilitate the flow of water from upslope areas into the fields. Final grading shall

leave the topsoil in a loose condition conducive to broadcast seeding. The erosion and sediment control plan in Appendix B outlines the stormwater best management practices that will be used.

6.6 Methods for Establishing Desired Plant Community

Establishing the desired plant community will be achieved by active means. During the wetland delineation, some hydrophytic vegetation was observed in the agricultural fields, thus providing evidence of a hydrophytic seed bank that may reestablish following hydrological restoration. All reestablished and rehabilitated wetland areas will be broadcast with a wetland seed mix containing species with variable shade tolerance (Table 3). Species selection was formulated following a review of “Ecological Communities of New York State” (Edinger et al., 2014). The planting plan in Appendix B reflects a goal to reestablish multiple wetland cover types (i.e., PEM, PSS, PFO).

Following initial construction, planting, and seeding activities, additional follow up spraying efforts will target areas dominated by invasive species. All herbicide applications will be conducted by a licensed pesticide applicator in accordance with state and federal guidelines. As the site develops, regular site visits during the growing season will be necessary to assure the re-establishment, rehabilitation, and enhancement zones remain free of all undesirable, invasive plant species. DU will continue to monitor and adaptively manage all invasive species on the property through hand pulling, mechanical removal, and through herbicide application in order to facilitate the shift back to a native plant community. Monitoring tasks include routine inspections in late spring and early summer to determine invasive species presence, and abundance. Any invasive species found will be rapidly controlled before seeds reach maturity.

Table 3 Planting List

Target Area	Common Name	Scientific Name	Wetland Indicator Status	% by weight	Propagule Type	Quantity/ Acre
All Wetland Zones	Fox Sedge	<i>Carex vulpinoidea</i>	OBL	25%	seed mix	20 lbs/ac for PEM, 15 lbs/ac for PFO
	Virginia wild rye	<i>Elymus virginicus</i>	FACW	15%		
	Lurid Sedge	<i>Carex lurida</i>	OBL	10%		
	Mannagrass	<i>Glyceria canadensis</i>	OBL	5%		
	Bluejoint Grass	<i>Calamagrostis canadensis</i>	OBL	5%		
	Broom Sedge	<i>Carex scoparia</i>	FACW	5%		
	Hop Sedge	<i>Carex lupulina</i>	OBL	5%		
	Soft rush	<i>Juncus effusus</i>	OBL	4%		
	Spotted joe pye weed	<i>Eutrochium maculatum</i>	OBL	4%		
	Blue vervain	<i>Verbena hastata</i>	FACW	3%		
	Bur Reed	<i>Sparganium americanum</i>	OBL	2%		
	Eastern Bur Reed	<i>Sparganium americanum</i>	OBL	2%		
	Nodding bur marigold	<i>Bidens cernua</i>	OBL	2%		
	Woolgrass	<i>Scirpus cyperinus</i>	OBL	2%		
	Swamp milkweed	<i>Asclepias incarnata</i>	OBL	2%		
	Boneset	<i>Eupatorium perfoliatum</i>	FACW	2%		
	Green bulrush	<i>Scirpus atrovirens</i>	OBL	2%		
	New England Aster	<i>Aster novae-angliae</i>	FACW	2%		
	New York Ironweed	<i>Vernonia noveboracensis</i>	FACW	1%		
	Soft stem bulrush	<i>Schoenoplectus tabernaemontani</i>	OBL	2%		
PFO	Red maple	<i>Acer rubrum</i>	FAC	125	bare root/potted	Sums to ≥ 500 stems/acre
	Silver maple	<i>Acer saccharinum</i>	FAC	25		
	Swamp white oak	<i>Quercus bicolor</i>	FACW	50		
	Yellow birch	<i>Betula alleghaniensis</i>	FAC	50		
	American elm	<i>Ulmus americana</i>	FACW	50		
	Highbush blueberry	<i>Vaccinium corymbosum</i>	FACW	50		
	Winterberry	<i>Ilex verticillata</i>	FACW	50		
	Sweet gale	<i>Myrica gale</i>	OBL	25		
	Red osier dogwood	<i>Cornus sericea</i>	FACW	25		
	Spicebush	<i>Lindera benzoin</i>	FACW	25		
	Arrowwood	<i>Viburnum dentatum</i>	FAC	25		
PSS	Speckled alder	<i>Alnus incana</i>	FACW	100	bare root/potted	Sums to ≥ 500 stems/acre
	Red osier dogwood	<i>Cornus sericea</i>	FACW	100		
	Silky dogwood	<i>Cornus amomum</i>	FACW	100		
	Silky willow	<i>Salix sericea</i>	OBL	100		

Target Area	Common Name	Scientific Name	Wetland Indicator Status	% by weight	Propagule Type	Quantity/Acre
	Buttonbush	<i>Cephalanthus occidentalis</i>	FACW	100		
Upland Buffer	Red maple	<i>Acer rubrum</i>	FAC	100	bare root/potted	Sums to ≥ 500 stems/acre
	White oak	<i>Quercus alba</i>	FACU	100		
	Red oak	<i>Quercus rubra</i>	FACU	100		
	White pine	<i>Pinus strobus</i>	FACU	100		
	Quaking aspen	<i>Populus tremuloides</i>	FACU	100		
PFO/Upland Buffer Mosaic	Red maple	<i>Acer rubrum</i>	FAC	100	bare root/potted	Sums to ≥ 500 stems/acre
	Quaking aspen	<i>Populus tremuloides</i>	FACU	100		
	White pine	<i>Pinus strobus</i>	FACU	100		
	Red osier dogwood	<i>Cornus sericea</i>	FACW	100		
	Silky dogwood	<i>Cornus amomum</i>	FACW	100		
Standard Upland Seed Mix	Creeping red fescue	<i>Festuca rubra</i>	FACU	45%	seed mix	45 lbs seed mixture/acre
	Perennial ryegrass	<i>Lolium perenne</i>	FACU	22%		
	Annual ryegrass	<i>Lolium multiflorum</i>	FACU	11%		
	Retop	<i>Agrostis gigantea</i>	FACW	4%		
	Birdsfoot trefoil	<i>Lotus corniculatus</i>	FACU	18%		

*Exact species composition subject to commercial availability.

6.7 Soil Management and Erosion Control Measures

All slopes, soils, substrates, and constructed features within and adjacent to the work site will follow stabilization protocols described in the Mucky Marsh Erosion and Sediment Control plan that will be submitted to NYSDEC prior to initiation of those activities. DU will obtain all necessary permits (e.g., SWPPP) prior to construction.

7. Maintenance Plan

DU will take appropriate measures after initial construction to ensure continued site maturation. DU will be responsible for monitoring and coordinating the execution of maintenance activities. Monitoring will occur regularly throughout the growing season from approximately May through September of each year. Regular inspections include but are not limited to inspection of: site hydrology, plant community development including diversity, percent cover and presence of invasive species, functioning of berms and water control structures. Maintenance activities may be triggered by:

- During yearly monitoring (Section 9), management concerns (e.g., deer herbivory, unauthorized all-terrain vehicle (ATV) use, dumping) and appropriate adaptive management strategies will be reviewed and implemented as necessary. These include but are not limited to: erection of fencing, placement of barriers to prohibit unauthorized ATV use, contacting local authorities. Plant community management may take on the

form of water level management, mechanical removal, mowing, and herbicide application to control invasive plant species.

- Unforeseen environmental conditions may affect the success of the project, but their effects can generally be managed through early detection. Flooding, drought, invasive species, site degradation, erosion, and vandalism are examples of some adverse conditions that can be managed.
- Routine maintenance checks, for example, on plant health and vigor, unwanted plant species, trash, herbivores, and areas with chronic erosion.
- Deer herbivory will be monitored, but in general densities are lower in this vs. other parts of New York State. Supplemental plantings, fencing, etc. may be required as adaptive management techniques.
- Supplemental plantings may be added, especially to overcome adverse weather conditions early within site establishment phases.
- Corrective measures may include adding or removing plants as conditions warrant, adding boards to water control structures or modifying local topography to ensure wetland hydrology, and additional mulching and seeding as needed.
- Routine checks of berms and water control structures to look for erosion and to make sure that the outlets are clear of debris. Any eroded areas will be repaired and reseeded.
- Routine checks of signs and associated maintenance will be performed.
- Estimated costs for annual monitoring and reporting are provided in Appendix G

8. Performance Standards

Success within the planned wetland re-establishment, rehabilitation, and enhancement portions of the Site is based on meeting the performance standards criteria described below and the USACE criteria for the three parameters described in the 1987 Corps of Engineers Wetlands Delineation Manual. These parameters require sufficient:

1. *wetland hydrology* to support adequate
2. *hydrophytic vegetation*, ultimately forming
3. *hydric soils*, all of which describe a functioning wetland.

The performance standards criteria described below will be monitored over a ten-year term that begins following the submittal of a post-construction as-built; the monitoring term includes three interim goals, and the final success criteria. When met, each interim goal would release 15% of the total remaining credits (i.e., credits remaining following mitigation plan and as-built approval). The final 25% of remaining credits would be released after the final vegetative goals have been met, a USACE approved long-term management plan and conservation easement have been executed and funded, and all other obligations and performance standards set forth in the instrument amendment and permit have been met. If areas of the Site are not meeting full performance criteria at the end of the 10-year monitoring period, the project sponsor may request that the areas be evaluated for partial credit release at a lower credit ratio, a modification to the

instrument amendment may be requested, and/or additional corrective action/monitoring may be required. It is important to note that the first two options will only be considered in the event that all efforts to meet standards and obligations have been exhausted (including corrective action).

8.1 First Interim Goal Releases 15% of Credits When:

- The areas meeting wetland criteria will have 50% relative coverage by native perennial hydrophytes.
- The areas meeting PFO/Upland Buffer Mosaic wetland criteria will have $\geq 10\%$ relative coverage by native perennial hydrophytes.
- The areas meeting wetland criteria including PFO/Upland Buffer Mosaic are demonstrating progress in vegetative development towards meeting the final VIBI-FQ performance standard and have a minimum VIBI-FQ of 20.
- The areas meeting PSS criteria will have at least 150 shrubs/trees per acre, and those stems will display normal and healthy growth, free of disease and pests. PSS zones will have at least half of the stems growing as shrub species.
- The upland buffer and PFO/Upland Buffer Mosaic rehabilitation and those areas meeting PFO criteria will have at least 150 shrubs/trees per acre, and those stems will display normal and healthy growth, free of disease and pests. Upland buffer, PFO/Upland Buffer Mosaic and PFO zones will have at least half of the stems growing as tree species.
- Wetland acreage will have less than 10% relative cover of all non-Typha invasive plant species such as, but not limited to: purple loosestrife (*Lythrum salicaria*), common reed (*Phragmites australis*), Japanese Knotweed (*Polygonum cuspidatum*), reed canary grass (*Phalaris arundinacea*).
- Due to the difficulty of distinguishing the three species of cattails (*Typha latifolia*, *Typha angustifolia*, and *Typha x glauca*), as well as the likelihood that at least one of these will be present in many types of New York wetlands, the total relative cover of all invasive species, including *Typha* spp., will be less than 15%.
- Upland buffer and PFO/Upland Buffer Mosaic rehabilitation areas will have no more than 25% relative cover composed of invasive species such as: buckthorn (*Rhamnus cathartica*), honeysuckle (*Lonicera* spp.), reed canary grass (*Phalaris arundinacea*).
- Upland buffer and PFO/Upland Buffer Mosaic rehabilitation areas will have at least 60% relative cover of native perennials.
- Upland buffer and PFO/Upland Buffer Mosaic rehabilitation areas criteria are demonstrating progress in vegetative development towards meeting the final VIBI-FQ performance standard and have a minimum VIBI-FQ of 20.
- Wetland rehabilitation areas and PFO/Upland Buffer Mosaic will demonstrate a $\geq 5\%$ increase in the frequency of saturation or inundation within 12-inches of the surface during the growing-season above pre-construction levels.

8.2 Second Interim Goal Releases 15% of Credits When:

- The areas meeting wetland criteria will have 60% relative coverage by native perennial hydrophytes.
- The areas meeting PFO/Upland Buffer Mosaic wetland criteria will have $\geq 20\%$ relative coverage by native perennial hydrophytes.
- The areas meeting wetland criteria including PFO/Upland Buffer Mosaic are demonstrating progress in vegetative development towards meeting the final VIBI-FQ performance standard and have a minimum VIBI-FQ of 32.
- The areas meeting PSS criteria will have at least 250 shrubs/trees per acre, and those stems will display normal and healthy growth, free of disease and pests. PSS zones will have at least half of the stems growing as shrub species.
- The upland buffer rehabilitation and PFO/Upland Buffer Mosaic and those areas meeting PFO criteria will have at least 250 shrubs/trees per acre, and those stems will display normal and healthy growth, free of disease and pests. Upland buffer, PFO/Upland Buffer Mosaic, and PFO zones will have at least half of the stems growing as tree species.
- Wetland acreage will have less than 8.5% relative cover of all non-*Typha* invasive plant species such as, but not limited to: purple loosestrife (*Lythrum salicaria*), common reed (*Phragmites australis*), Japanese Knotweed (*Polygonum cuspidatum*), reed canary grass (*Phalaris arundinacea*).
- Due to the difficulty of distinguishing the three species of cattails (*Typha latifolia*, *Typha angustifolia*, and *Typha x glauca*), as well as the likelihood that at least one of these will be present in many types of New York wetlands, the total relative cover of all invasive species, including *Typha* spp., will be less than 13.75%.
- Upland buffer and PFO/Upland Buffer Mosaic rehabilitation areas will have no more than 20% relative cover composed of invasive species such as: buckthorn (*Rhamnus cathartica*), honeysuckle (*Lonicera* spp.), reed canary grass (*Phalaris arundinacea*).
- Upland buffer and PFO/Upland Buffer Mosaic rehabilitation areas will have at least 70% relative cover of native perennials.
- Upland buffer and PFO/Upland Buffer Mosaic rehabilitation areas criteria are demonstrating progress in vegetative development towards meeting the final VIBI-FQ performance standard and have a minimum VIBI-FQ of 32.
- Wetland and PFO/Upland Buffer Mosaic rehabilitation areas will demonstrate a $\geq 10\%$ increase in the frequency of saturation or inundation within 12-inches of the surface during the growing-season above pre-construction levels.

8.3 Third Interim Goal Releases 15% of Credits When:

- The areas meeting wetland criteria will have 75% relative coverage by native perennial hydrophytes.
- The areas meeting PFO/Upland Buffer Mosaic wetland criteria will have $\geq 30\%$ relative coverage by native perennial hydrophytes.

- The areas meeting wetland criteria including PFO/Upland Buffer Mosaic are demonstrating progress in vegetative development towards meeting the final VIBI-FQ performance standard and have a minimum VIBI-FQ of 36.
- The areas meeting PSS criteria will have at least 350 shrubs/trees per acre, and those stems will display normal and healthy growth, free of disease and pests. PSS zones will have at least half of the stems growing as shrub species.
- The upland buffer rehabilitation and PFO/Upland Buffer Mosaic and those areas meeting PFO criteria will have at least 350 shrubs/trees per acre, and those stems will display normal and healthy growth, free of disease and pests. Upland buffer and PFO zones will have at least half of the stems growing as tree species.
- Wetland acreage will have less than 6.5 % relative cover of all non-*Typha* invasive plant species such as, but not limited to: purple loosestrife (*Lythrum salicaria*), common reed (*Phragmites australis*), Japanese Knotweed (*Polygonum cuspidatum*), reed canary grass (*Phalaris arundinacea*).
- Due to the difficulty of distinguishing the three species of cattails (*Typha latifolia*, *Typha angustifolia*, and *Typha x glauca*), as well as the likelihood that at least one of these will be present in many types of New York wetlands, the total relative cover of all invasive species, including *Typha* spp., will be less than 12.5%.
- Upland buffer and PFO/Upland Buffer Mosaic rehabilitation areas will have no more than 15% relative cover composed of invasive species such as: buckthorn (*Rhamnus cathartica*), honeysuckle (*Lonicera* spp.), reed canary grass (*Phalaris arundinacea*).
- Upland buffer and PFO/Upland Buffer Mosaic rehabilitation areas will have at least 75% relative cover of native perennials.
- Upland buffer and PFO/Upland Buffer Mosaic rehabilitation areas criteria are demonstrating progress in vegetative development towards meeting the final VIBI-FQ performance standard and have a minimum VIBI-FQ of 36.
- Wetland and PFO/Upland Buffer Mosaic rehabilitation areas will demonstrate a $\geq 15\%$ increase in the frequency of saturation or inundation within 12-inches of the surface during the growing-season above pre-construction levels.

8.4 Final Goal Releases 25% at The End of the 10-Year Monitoring Period

- The wetlands shall have 90% relative coverage by native perennial hydrophytes.
- The areas meeting PFO/Upland Buffer Mosaic wetland criteria will have $\geq 40\%$ relative coverage by native perennial hydrophytes.
- The areas meeting wetland and PFO/Upland Buffer Mosaic criteria have met the final VIBI-FQ performance standard of 40.
- The areas meeting PSS criteria will have at least 425 shrubs/trees per acre ≥ 1 m in height, and those stems will display normal and healthy growth, free of disease and pests. PSS zones will have at least half of the stems growing as shrub species.



- The upland buffer and PFO/Upland Buffer Mosaic rehabilitation and those areas meeting PFO criteria will have at least 425 shrubs/trees per acre ≥ 3 " diameter at breast height, and those stems will display normal and healthy growth, free of disease and pests. Upland buffer, PFO/Upland Buffer Mosaic, and PFO zones will have at least half of the stems growing as tree species.
- Wetland acreage and PFO/Upland Buffer Mosaic will have less than 5 % relative cover of all non-*Typha* invasive plant species such as, but not limited to: purple loosestrife (*Lythrum salicaria*), common reed (*Phragmites australis*), Japanese Knotweed (*Polygonum cuspidatum*), reed canary grass (*Phalaris arundinacea*).
- Due to the difficulty of distinguishing the three species of cattails (*Typha latifolia*, *Typha angustifolia*, and *Typha x glauca*), as well as the likelihood that at least one of these will be present in many types of New York wetlands, the total relative cover of all invasive species, including *Typha* spp., will be less than 10%.
- Upland buffer and PFO/Upland Buffer Mosaic rehabilitation areas are demonstrating progress in vegetative development and achieve a net increase in VIBI-FQ score above pre-construction levels.
- Upland buffer rehabilitation areas will have no more than 10% relative cover composed of invasive species such as: buckthorn (*Rhamnus cathartica*), honeysuckle (*Lonicera* spp.), reed canary grass (*Phalaris arundinacea*).
- Upland buffer and PFO/Upland Buffer Mosaic rehabilitation areas will have at least 80% relative cover of native perennials.
- Upland buffer and PFO/Upland Buffer Mosaic rehabilitation areas criteria are demonstrating progress in vegetative development towards meeting the final VIBI-FQ performance standard and have a minimum VIBI-FQ of 40.
- Wetland rehabilitation and PFO/Upland Buffer Mosaic areas will demonstrate a $\geq 20\%$ increase in the frequency of saturation or inundation within 12-inches of the surface during the growing-season above pre-construction levels in at least 3 years out of 10.
- A Corps approved long-term management plan and conservation easement have been executed and funded.
- All other obligations and performance standards set forth in the instrument amendment and permit have been met.

To reduce or waive remaining monitoring requirements before the ten-year monitoring period ends, at least two consecutive monitoring reports must satisfactorily meet final success criteria.

8.5 Wetland Hydrology and Hydric Soils

To meet the wetland criteria, re-established wetlands must be inundated (flooded or ponded) or have a water table ≤ 12 inches below the soil surface for ≥ 14 consecutive days during the growing season at a minimum frequency of 5 years in 10 ($\geq 50\%$ probability). Any combination of inundation or shallow water table is acceptable in meeting the 14-day minimum requirement. Hydrology will be determined through an analysis of water-well data, visual inspections, and review of permanently located water-level gauges. The growing season can be approximated as the period of time between the average date of the last killing frost in the spring to the average date of the first killing frost in the fall, this is usually the beginning of May through September. We will use a temperature threshold of 28 degrees F or lower at a frequency of 5 years in 10, and will draw from weather station records at Warsaw, NY to determine the typical growing season-length.

Rehabilitated areas (Fields 3 and 4) are being monitored with two continuously logging water level monitoring wells which commenced in January 2019 (Figure 5). The temporal record of pre-construction conditions is expected to provide 3 full years of baseline data from which to compare pre-vs. post construction hydrology. This record will be augmented with manual water-level measurements in Fields 1 and 3 to be performed at two additional staff gauge/well locations post-construction. Monitoring locations are shown in Appendix B. Moreover, photo-points included in these areas will provide the ability to qualitatively assess the retention of hydrology compared to baseline conditions to augment quantitative methods.

The proposed rehabilitation areas convey surface waters, low berms are intended to impede the flow of this water which should be visibly demonstrable from photo and well data analysis. Field 3 and 4 in their pre-construction condition have been in agricultural rotation, having eliminated microtopographic variation improving drainage of the site. We proposed to achieve a 20% increase in frequency of near surface saturation in the plant rooting zone (within 12-inches of the surface) in 5 years out of 10 over baseline conditions during the growing season, which can be approximated as the frost-free period. These areas have been in crop rotations, with agricultural activities reducing microtopographic variability and facilitating improved drainage. Cessation of agricultural activities, reintroduction of microtopography through heavy disking and placement of a low berm to impede surface flows have been sufficient to retain additional hydrology.

9. Monitoring Requirements

9.1 Monitoring Report Requirements

Annual site monitoring will begin after construction is completed and will continue for ten (10) years. Monitoring reports will be submitted as outlined in Table 4. Monitoring locations are shown in Appendix B. Monitoring will consist of the following:

- Post construction, monitoring report complete with photographs, baseline ecological descriptions, as-builts that describe the actual constructed features with 0.5' contours, wetland delineation maps with habitat type breakdowns, delineation data forms, estimates of relative cover of invasive plant species, and a description of any deviation from the Instrument Amendment.
- Descriptions of the monitoring inspection protocols used.
- Water depths will be reported from throughout the site from permanent locations, and as well as hydrology information derived from Wetland Determination Data Forms completed throughout the site. Locations of each water depth monitoring location and data point will be indicated on the survey map(s). Three permanent monitoring wells are currently installed in the site.
- Concisely describe remedial actions completed during the monitoring year to meet the three success standards – actions such as, replanting, controlling invasive plant species (with biological, herbicidal, or mechanical methods), re-grading the site, adjusting site hydrology, etc.
- Description of other remedial actions taken.
- Report on the status of all erosion control measures on the mitigation site. Identify whether they are functioning. Descriptions of the necessity of any planned additional temporary measures.
- Review of all information collected to meet all performance goals (8.1, 8.2, 8.3, 8.4, 8.5).
- Photographs taken from permanent photo points shown on a site plan.
- List of wildlife observed and other interesting biological occurrences.
- A qualitative description of the general arboreal plant health, vigor and mortality rates, including a prognosis for their future survival will be included along with photos illustrating tree growth.
- All areas >0.1 acre that are dominated by invasives will be mapped and reported.
- VIBI-FQ scores will be recorded for all reestablishment, rehabilitation, and enhancement areas generating credits in years of credit release requests. VIBI-FQ data sheets will be provided with monitoring report.

9.2 Reporting Schedule

Monitoring reports, including an As-Built Report will be submitted no later than February 28 and will describe conditions in the prior growing season. The As-Built will be submitted following the completion of construction and planting. The As-Built survey will include a detailed contour map and any deviations from the construction plans. Each report cover sheet shall indicate the year, report number, and Department of Army permit numbers. All reports described in this section will be submitted to the New York IRT, and (two hard copies) to the District Engineer at the Department of the Army, at the Buffalo District Corps of Engineers 1776 Niagara Street,

Buffalo, NY 14207-3199 and to 1 Buffington Street, Watervliet Arsenal Building 10, Watervliet, New York 12189. All monitoring, reporting, requests and adaptive management implementation will be the responsibility of DU. Measures requiring additional soil manipulation or changes in hydrology will be undertaken only after written approval from the Buffalo District Engineer has been obtained.

Table 4 Reporting Schedule

Activity	Description	Year
As-built Report	To be submitted in February, the year following completion of construction and planting	0
1st Monitoring Report	First monitoring report / no credit release requested	1
2nd Monitoring Report	1st Interim Credit Release Request	3
3rd Monitoring Report	2nd Interim Credit Release Request	5
4rth Monitoring Report	3rd Interim Credit Release Request	7
Final Monitoring Report	Final Credit Release Request	10

*Credit release are anticipated to coincide with a given year, but they may deviate based on performance. Reports will be submitted by no later than February of the calendar year following monitoring activities. Monitoring and adaptive management and or corrective actions may extend beyond 10 years if performance criteria have not been met by year 10.

10. Long-term Management Plan, Including Financial Arrangements

In order to provide for a more sustainable approach to long-term management, WAT will transfer ownership of the site to the Long-Term Steward following construction. It is anticipated that Central New York Land Trust (CNYLT) will be the Long-Term Steward; in the event that CNYLT does not take on the role of Long-Term Steward, DU would be the default long-term manager until another Steward acceptable to USACE and the IRT is identified. Prior to execution of the Long-Term Management Plan (LTMP), it will be provided to the USACE and IRT for review. DU will provide written notice to the USACE at least 60-days prior to transfer of ownership of the Site to the Long-Term Steward. A USACE-approved Conservation Easement and LTMP, and Site Access and Management Easement (SAME), to be held by DU, will be recorded to the deed at the time of transfer. The SAME will outline responsibilities of the Long-Term Steward and DU during the active mitigation monitoring period, with DU remaining responsible for adaptive management and monitoring of the Site prior to entrance into the Long-term Management Phase. During the monitoring period, as outlined in the SAME, the Long-Term Steward will assist with DU's efforts to maintain the conservation values of the site and meet the objectives of this Instrument Amendment. When the Site enters the long-term management phase, the conditions of the SAME will be satisfied, and a notice of termination of the SAME will be recorded to the Deed.

The responsibilities of the Long-Term Steward are outlined in Table 5 and will be further described in the LTMP. Those responsibilities will begin when the final performance standards outlined in Section 8 are signed off on by USACE. It is anticipated entrance into The Long-Term Management phase will occur 10 years following construction. At that time, The Long-Term Steward shall implement the LTMP, managing and monitoring the Site to preserve its habitat and conservation values. At the start of the Long-Term Management phase DU will assist The Long-Term Steward with updating the baseline site conditions described in the LTMP to reflect current conditions. During the long-term protection phase, the Site will be monitored at least annually by The Long-Term Land Steward, and identification of threats to the Sites' conservation values will trigger adaptive management actions to maintain the integrity of the site. The responsibilities of the Long-Term Steward include prevention of: erosion, unauthorized use, dumping, as well as adaptive management of invasive plant species, and maintenance of signage designating the area as a protected area.

Funds for a Long-term Management will be provided by DU and will be maintained as a non-wasting endowment to cover costs of annual monitoring, management of invasive species as needed, regular maintenance of signs, prevention of dumping, unauthorized use, and any other requirements of the LTMP. Anticipated long-term management activities and their costs are identified in Table 5. At a conservative 4% annual growth rate, we estimate \$4,175 will be available annually for maintenance and adaptive management based on a \$104,375.00 endowment. Changes to the Long-Term Manager or the LTMP will require approval by USACE. Prior to closure of the Site, and entrance into long-term management, DU will continue to be responsible for adaptive management and site maintenance.

Table 5 Anticipated Long-term Management Needs

Subject to Long-Term Steward Approval.

Anticipated Management Activity*	Stewardship Trigger	Action	Action Frequency	Annual Monitoring Cost	Action Cost	Annual Action Total
<i>Invasive Species</i>	<i>Greater than 10% coverage of invasive presence; presence of new species</i>	<i>e.g., Herbicide spraying and hand pulling</i>	<i>1/year</i>	<i>\$300</i>	<i>\$1,000</i>	<i>\$1,300</i>
<i>Trash Removal/Prevention of Unauthorized Access</i>	<i>Trash present, damage to site from ATV traffic</i>	<i>Prevent access for dumping</i>	<i>1/year</i>	<i>\$300</i>	<i>\$500</i>	<i>\$800</i>
<i>Maintaining posted signs</i>	<i>Signs damaged, missing</i>	<i>Replace/repair signs</i>	<i>1/year</i>	<i>\$200</i>	<i>\$200</i>	<i>\$400</i>
<i>Erosion</i>	<i>Any erosion that is more than minor or appears to be a threat to long-term stability</i>	<i>Stabilize with appropriate materials (rock, plantings, etc.)</i>	<i>Every 5 years</i>	<i>\$100</i>	<i>\$500</i>	<i>\$600</i>
<i>Title Defense Insurance</i>			<i>1/year</i>	<i>NA</i>	<i>\$75</i>	<i>\$75</i>
<i>Contingency (including inflation)</i>	<i>Actions requiring adaptive management outstrip dedicated available funds for the year</i>		<i>1/year</i>	<i>NA</i>	<i>\$1,000</i>	<i>\$1,000</i>

Total anticipated annual management cost (based on total above)

\$4,175

4%

Expected interest growth

Total non-wasting stewardship endowment costs (to be self-sustaining)

\$104,375.00

11. Adaptive Management Plan, Including Addressing Invasive Species Control

An access road from Route 20 provides access for maintenance. Unforeseen environmental conditions can also affect a wetland's viability. Flooding, prolonged drought, invasive species, site degradation (i.e., trash dumping, illegal logging, ATV travel), erosion and vandalism are examples of some adverse conditions that with early detection and proper management can be overcome. Every wetland site has its own unique characteristics that should be addressed with an adaptive management plan for long-term viability. Proper monitoring of the site will ensure adaptive management activities are implemented as new information is gathered. Completion of the regular maintenance activities outlined in Section 7 such as invasive species control and trash removal during routine monitoring trips will reduce the need for larger intervention. DU will regularly review the status of this site to confirm that all necessary activities have been implemented and that adequate hydrology and hydrophytic plant cover has become established to meet performance criteria. After construction, DU will conduct regular monitoring visits during each growing season to evaluate the progress of the site relative to the performance standards outlined in Section 8. Occasional visits may also occur outside of the growing season.

Monitoring visits may include delineating the wetland acreage on-site, observing water levels, evaluating the plant community through vegetation monitoring (i.e., VIBI-FQ, woody stem counts, invasive species cover), inspecting berms, evaluating herbivory, and looking for any damage to the site. Data collected during these visits will be summarized in the monitoring reports outlined in Section 9.1 and compared against the interim goals specified in Sections 8.1-8.5. If any repairs are needed or if the site fails to be meeting any of the interim goals, DU will utilize adaptive management to address the issue(s).

Reestablishment, rehabilitation, and enhancement efforts will focus on recreating and improving wetland function. Techniques will include but are not limited to, invasive plant species control, and planting native vegetation to improve the VIBI-FQ score. Invasive species control methods include, but are not limited to, water level management, spraying, hand pulling, and mechanical removal. When monitoring indicates that a performance standard is not being met, the causes for failure will be evaluated to determine if simply more time is needed or whether a remedial action may be required. Remedial action to help the site meet the performance standard shall be taken as soon as practicable once an issue has been identified. Remedial actions may include, but are not limited to: seeding or planting, non-native plant control, and erosion control measures. DU staff will be regularly monitoring the site throughout the growing season and at least once per dormant season in order to minimize the possibility for low-berm failure. Remedial actions requiring earth movement or changes in hydrology will not be implemented without written approval from the USACE.

If USACE in consultation with the IRT, determines that the site (or any portion thereof) is failing to make satisfactory progress towards meeting any performance goal within the monitoring

period, DU must develop a remedial action plan to correct the deficiencies, or alternately a reduction of credits may be levied against underperforming areas. In the prior case, the remedial action plan shall be submitted to the IRT within three months of receipt of written notification of deficiencies from USACE. Remedial action plans may include suggested modifications to improve hydrology (e.g., regrading, addition of water control structures, ditch plugs, groundwater dams), and or additional plantings. The IRT shall in a timely manner provide written acceptance of the submitted plan or a modified plan acceptable to the IRT. The IRT-accepted remedial action plan (as submitted by DU or as modified by the IRT) will then be returned to DU and DU shall implement the measures specified in the remedial action plan within six months or along a timeline as otherwise provided in the remedial action plan. The default and closure provisions are further described in Appendix E. Once the monitoring period is over, the completed wetland will be managed by the Long-Term Steward and managed only as needed and specified in the Long-Term Stewardship plan.

12. Financial Assurances

Financial assurances for the construction and performance of the Site will be provided by DU in the form of a performance bond. Financial assurances will be established following mitigation plan approval and prior to release of credits from the Site. The financial assurances will extend sufficient financial resources to completely cover the full cost of construction and replanting of the project if necessary, to achieve success. In the project budget (Appendix G) we estimate construction, planting and associated staffing costs at \$305,062. Financial assurances shall no longer be required once the compensatory mitigation project has been determined by the district engineer to be successful in accordance with its performance standards. The financial assurances will not be called upon unless DU has exhausted the existing project budget, including all money set aside for contingency and wetland maintenance, excluding the funds to be utilized for the Long-Term Stewardship endowment and conservation easement.

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Appendix A. Wetland Delineation Report

1.0 INTRODUCTION

Ducks Unlimited, Inc. (DU) investigated site conditions at Much Marsh site in the summer of 2020. The Mitigation Site is located at Latitude: 43.40614°N and Longitude: -76.56551°W off New York State Route 20 in the Towns of Oswego, Oswego County, New York. The site is bisected by Snake Creek, which is within the Irondequoit 8-digit HUC (04140101).

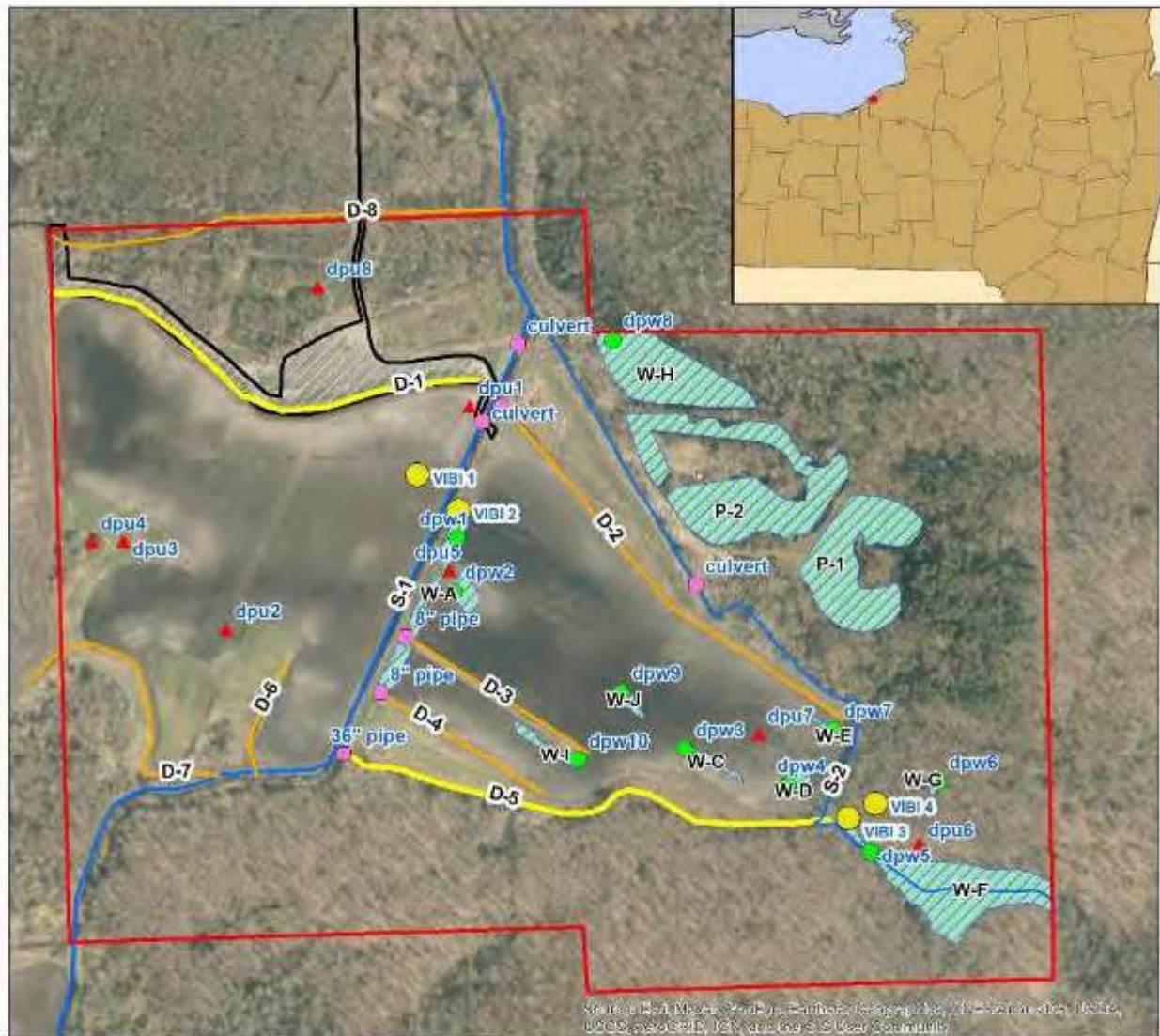
2.0 METHODS

Onsite data collection and wetland boundary delineation of the 94.364-acre property was performed by DU between June and July 2020. The boundaries were delineated following the protocols outlined in the United States Army Corps of Engineers' (USACE) 1987 "Wetland Delineation Manual" and data were collected on the "Regional Supplement to the Corps of Engineers Wetland Delineations Manual: Northcentral and Northeast Region (Version 2.0)" (Regional Supplement). A routine on-site determination was performed as specified in Section D of Chapter IV of the 1987 Delineation Manual. Prior to the delineation survey, the property was walked to identify general topography, drainage patterns, major plant communities, and potential areas of disturbance. Climatic/hydrologic conditions were typical for this time of year.

3.0 RESULTS

Normal circumstances were present at the time of data collection. The most prevalent type of aquatic resource delineated at the Mitigation Site was open water 4.81 acres, and PFO 1.234 acres.

Wetland Delineation Maps and Datasheets:



-  VIBI Plots
-  Private Access Road
-  Ditch
-  Shallow Ditch
-  Snake Creek
-  Tributary to Snake Creek
-  Wetlands - rev. 3
-  Access / No Credit
-  Property 94.364-acres
-  Other
-  Upland Datapoint
-  Wetland Datapoint

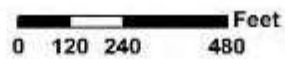


Table 1. Delineated Wetlands at the Mitigation Site

Wetland ID	Wetland Type	Wetland (Acres)	Data Points	Latitude	Longitude
Wetland A	PEM	0.31	DPW-1	43.40592196	-76.56488346
Wetland B	PEM	0.11	DPW-2	43.40597239	-76.56451759
Wetland C	PEM	0.05	DPW-3	43.40487564	-76.56225001
Wetland D	PEM	0.06	DPW-4	43.40474926	-76.56143994
Wetland E	PEM	0.02	DPW-7	43.40513037	-76.56118963
Wetland F	PFO	1.19	DPW-5	43.40396777	-76.55969751
Wetland G	PFO	0.04	DPW-6	43.40474783	-76.56016068
Wetland H	PEM	0.96	DPW-8	43.40747547	-76.56271796
Wetland I	PEM	0.11	DPW-10	43.40494369	-76.56371287
Wetland J	PEM	0.06	DPW-9	43.40527584	-76.56302823
Wetland P-1	Open Water	1.25	-	43.4062283	-76.56091348
Wetland P-2	Open Water	1.76	-	43.40674972	-76.56203019

Table 2: Streams and Ditches at the Mitigation Site

Label	Name	Linear Feet
S-1	Snake Creek	2,359
S-2	NYSDEC Stream (Tributary to Snake Creek)	2,293
D-1	West to East Ditch	1,246
D-2	Interior Ditch	1,160
D-3	Interior Ditch	527
D-4	Interior Ditch	491
D-5	East to West Ditch	1,238
D-6	Interior Ditch	411
D-7	Interior Ditch	859
D-8	West to East Ditch	1,085

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mucky Marsh City/County: Oswego County Sampling Date: 8-14-2020
 Applicant/Owner: Ducks Unlimited State: NY Sampling Point: DPU1
 Investigator(s): Patrick Raney and John Fraser Section, Township, Range: _____
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): None Slope %: 0
 Subregion (LRR or MLRA): LRR R Lat: 43°24'26 Long: 76°33'52 Datum: WGS84
 Soil Map Unit Name: Carlisle muck (Ce) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>x</u> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <u>x</u> No _____	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply)		<u>Secondary Indicators</u> (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <u>X</u>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 well drained muckland with ditches >8 feet deep surrounding the muck and dewatering the site

VEGETATION – Use scientific names of plants.

Sampling Point: DPU1

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ =Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>61</u></td> <td>x 4 = <u>244</u></td> </tr> <tr> <td>UPL species <u>12</u></td> <td>x 5 = <u>60</u></td> </tr> <tr> <td>Column Totals: <u>73</u> (A)</td> <td><u>304</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>4.16</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>61</u>	x 4 = <u>244</u>	UPL species <u>12</u>	x 5 = <u>60</u>	Column Totals: <u>73</u> (A)	<u>304</u> (B)	Prevalence Index = B/A = <u>4.16</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>61</u>	x 4 = <u>244</u>																			
UPL species <u>12</u>	x 5 = <u>60</u>																			
Column Totals: <u>73</u> (A)	<u>304</u> (B)																			
Prevalence Index = B/A = <u>4.16</u>																				
_____ =Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ =Total Cover				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Plantago major</u>	<u>8</u>	<u>No</u>	<u>FACU</u>																	
2. <u>Daucus carota</u>	<u>10</u>	<u>Yes</u>	<u>UPL</u>																	
3. <u>Ambrosia artemisifolia</u>	<u>32</u>	<u>Yes</u>	<u>FACU</u>																	
4. <u>Oenothera biennis</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. <u>Melilotus officinalis</u>	<u>6</u>	<u>No</u>	<u>FACU</u>																	
6. <u>Trifolium pratense</u>	<u>3</u>	<u>No</u>	<u>FACU</u>																	
7. <u>Cichorium intybus</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
8. <u>Krigia virginica</u>	<u>2</u>	<u>No</u>	<u>UPL</u>																	
9. <u>Chenopodium album</u>	<u>2</u>	<u>No</u>	<u>FACU</u>																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>73</u> =Total Cover																				
Woody Vine Stratum (Plot size: <u>30</u>)				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____ =Total Cover				Hydrophytic Vegetation Present? Yes <u> </u> No <u> X </u>																

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DPU1

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mucky Marsh City/County: Oswego County Sampling Date: 8-14-2020
 Applicant/Owner: Ducks Unlimited State: NY Sampling Point: DPU2
 Investigator(s): Patrick Raney and John Fraser Section, Township, Range: _____
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): None Slope %: 0
 Subregion (LRR or MLRA): LRR R Lat: 43°24'20 Long: 76°34'0 Datum: WGS84
 Soil Map Unit Name: Carlisle muck (Ce) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <u>x</u> No _____	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply)		<u>Secondary Indicators</u> (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <u>X</u>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 well drained muckland with ditches >8 feet deep surrounding the muck and dewatering the site

Sampling Point: DPU2

Tree Stratum	(Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
		=Total Cover		
Sapling/Shrub Stratum	(Plot size: 15)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
		=Total Cover		
Herb Stratum	(Plot size: 5)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		=Total Cover		
Woody Vine Stratum	(Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
		=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 0	x 3 = 0
FACU species 68	x 4 = 272
UPL species 0	x 5 = 0
Column Totals: 68 (A)	272 (B)
Prevalence Index = B/A = 4.00	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DPU2

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mucky Marsh City/County: Oswego County Sampling Date: 8-14-2020
 Applicant/Owner: Ducks Unlimited State: NY Sampling Point: DPU3
 Investigator(s): Patrick Raney and John Fraser Section, Township, Range: _____
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): None Slope %: 0
 Subregion (LRR or MLRA): LRR R Lat: 43°24'22 Long: 76°34'3 Datum: WGS84
 Soil Map Unit Name: Carlisle muck (Ce) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Dry, well drained muck.

VEGETATION – Use scientific names of plants.

Sampling Point: DPU3

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ =Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>2</u></td> <td>x 3 = <u>6</u></td> </tr> <tr> <td>FACU species <u>74</u></td> <td>x 4 = <u>296</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>76</u> (A)</td> <td><u>302</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.97</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>2</u>	x 3 = <u>6</u>	FACU species <u>74</u>	x 4 = <u>296</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>76</u> (A)	<u>302</u> (B)	Prevalence Index = B/A = <u>3.97</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>2</u>	x 3 = <u>6</u>																			
FACU species <u>74</u>	x 4 = <u>296</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>76</u> (A)	<u>302</u> (B)																			
Prevalence Index = B/A = <u>3.97</u>																				
_____ =Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ =Total Cover				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
_____ =Total Cover																				
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Phleum pratense</u>	<u>45</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Calystegia sepium</u>	<u>2</u>	<u>No</u>	<u>FAC</u>																	
3. <u>Taraxacum officinale</u>	<u>2</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Lolium perenne</u>	<u>22</u>	<u>Yes</u>	<u>FACU</u>																	
5. <u>Oxalis europaea</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
_____ =Total Cover				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
_____ =Total Cover																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____ =Total Cover																				

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DPU3

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mucky Marsh City/County: Oswego County Sampling Date: 8-14-2020
 Applicant/Owner: Ducks Unlimited State: NY Sampling Point: DPU3
 Investigator(s): Patrick Raney and John Fraser Section, Township, Range: _____
 Landform (hillside, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope %: 0
 Subregion (LRR or MLRA): LRR R Lat: 43°24'22 Long: 76°34'4 Datum: WGS84
 Soil Map Unit Name: Scriba gravelly fine sandy loam ScB NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply)		<u>Secondary Indicators</u> (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <u>X</u>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Dry, well drained muck. Hedge row area with fill from overburden from previous drainage activities. Rock piles scattered.

VEGETATION – Use scientific names of plants.

Sampling Point: DPU3

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer negundo</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40.0%</u> (A/B)																
2. <u>Populus deltoides</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>60</u>	=Total Cover	Prevalence Index worksheet: <table style="width: 100%;"> <thead> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>4</u></td> <td>x 2 = <u>8</u></td> </tr> <tr> <td>FAC species <u>79</u></td> <td>x 3 = <u>237</u></td> </tr> <tr> <td>FACU species <u>71</u></td> <td>x 4 = <u>284</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>154</u> (A)</td> <td><u>529</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.44</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>4</u>	x 2 = <u>8</u>	FAC species <u>79</u>	x 3 = <u>237</u>	FACU species <u>71</u>	x 4 = <u>284</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>154</u> (A)	<u>529</u> (B)	Prevalence Index = B/A = <u>3.44</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>4</u>	x 2 = <u>8</u>																			
FAC species <u>79</u>	x 3 = <u>237</u>																			
FACU species <u>71</u>	x 4 = <u>284</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>154</u> (A)	<u>529</u> (B)																			
Prevalence Index = B/A = <u>3.44</u>																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Lonicera tatarica</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>20</u>	=Total Cover	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Rubus pensilvanicus</u>	<u>16</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Impatiens capensis</u>	<u>4</u>	<u>No</u>	<u>FACW</u>																	
3. <u>Alliaria petiolata</u>	<u>35</u>	<u>Yes</u>	<u>FACU</u>																	
4. <u>Urtica dioica</u>	<u>12</u>	<u>No</u>	<u>FAC</u>																	
5. <u>Calystegia sepium</u>	<u>7</u>	<u>No</u>	<u>FAC</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>74</u>	=Total Cover	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		_____	=Total Cover																	

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DPU3

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mucky Marsh City/County: Oswego County Sampling Date: 8-14-2020
 Applicant/Owner: Ducks Unlimited State: NY Sampling Point: DPU5
 Investigator(s): Patrick Raney and John Fraser Section, Township, Range: _____
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): None Slope %: 0
 Subregion (LRR or MLRA): LRR R Lat: 43°24'22 Long: 76°33'52 Datum: WGS84
 Soil Map Unit Name: Carlisle muck (Ce) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) <u>x</u> Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: DPU5

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer negundo</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40.0%</u> (A/B)																
2. <u>Populus deltoides</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>60</u>	=Total Cover	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>2</u></td> <td>x 2 = <u>4</u></td> </tr> <tr> <td>FAC species <u>60</u></td> <td>x 3 = <u>180</u></td> </tr> <tr> <td>FACU species <u>81</u></td> <td>x 4 = <u>324</u></td> </tr> <tr> <td>UPL species <u>4</u></td> <td>x 5 = <u>20</u></td> </tr> <tr> <td>Column Totals: <u>147</u> (A)</td> <td><u>528</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.59</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>2</u>	x 2 = <u>4</u>	FAC species <u>60</u>	x 3 = <u>180</u>	FACU species <u>81</u>	x 4 = <u>324</u>	UPL species <u>4</u>	x 5 = <u>20</u>	Column Totals: <u>147</u> (A)	<u>528</u> (B)	Prevalence Index = B/A = <u>3.59</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>2</u>	x 2 = <u>4</u>																			
FAC species <u>60</u>	x 3 = <u>180</u>																			
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Column Totals: <u>147</u> (A)	<u>528</u> (B)																			
Prevalence Index = B/A = <u>3.59</u>																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Lonicera tatarica</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>20</u>	=Total Cover	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Ambrosia artemisiifolia</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Chenopodium album</u>	<u>22</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Cyperus esculentus</u>	<u>1</u>	<u>No</u>	<u>FACW</u>																	
4. <u>Taraxacum officinale</u>	<u>6</u>	<u>No</u>	<u>FACU</u>																	
5. <u>Oenothera biennis</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
6. <u>Portulaca oleracea</u>	<u>3</u>	<u>No</u>	<u>FACU</u>																	
7. <u>Polygonum pensylvanicum</u>	<u>1</u>	<u>No</u>	<u>FACW</u>																	
8. <u>Brassica nigra</u>	<u>4</u>	<u>No</u>	<u>UPL</u>																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>67</u>	=Total Cover	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		_____	=Total Cover																	

Remarks: (Include photo numbers here or on a separate sheet.)
Bare ground was 36% cover

SOIL

Sampling Point: DPU5

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mucky Marsh City/County: Oswego County Sampling Date: 8-14-2020
 Applicant/Owner: Ducks Unlimited State: NY Sampling Point: DPU6
 Investigator(s): Patrick Raney and John Fraser Section, Township, Range: _____
 Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): convex Slope %: 2
 Subregion (LRR or MLRA): LRR R Lat: 43°24'15.619 Long: 76°33'37.077 Datum: WGS84
 Soil Map Unit Name: _____ NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply)		<u>Secondary Indicators</u> (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> ? Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <u>X</u>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Upland datapoint

VEGETATION – Use scientific names of plants.

Sampling Point: DPU6

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer saccharum</u>	<u>55</u>	<u>Yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)																
2. <u>Prunus serotina</u>	<u>40</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>95</u>	=Total Cover	Prevalence Index worksheet: <table style="width: 100%;"> <thead> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>11</u></td> <td>x 2 = <u>22</u></td> </tr> <tr> <td>FAC species <u>39</u></td> <td>x 3 = <u>117</u></td> </tr> <tr> <td>FACU species <u>114</u></td> <td>x 4 = <u>456</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>164</u> (A)</td> <td><u>595</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.63</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>11</u>	x 2 = <u>22</u>	FAC species <u>39</u>	x 3 = <u>117</u>	FACU species <u>114</u>	x 4 = <u>456</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>164</u> (A)	<u>595</u> (B)	Prevalence Index = B/A = <u>3.63</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>11</u>	x 2 = <u>22</u>																			
FAC species <u>39</u>	x 3 = <u>117</u>																			
FACU species <u>114</u>	x 4 = <u>456</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>164</u> (A)	<u>595</u> (B)																			
Prevalence Index = B/A = <u>3.63</u>																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Lindera benzoin</u>	<u>6</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Prunus serotina</u>	<u>7</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>13</u>	=Total Cover	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Toxicodendron radicans</u>	<u>22</u>	<u>Yes</u>	<u>FAC</u>																	
2. <u>Maianthemum racemosum</u>	<u>12</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Dryopteris intermedia</u>	<u>12</u>	<u>Yes</u>	<u>FAC</u>																	
4. <u>Lindera benzoin</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>51</u>	=Total Cover	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. <u>Vitis riparia</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		<u>5</u>	=Total Cover																	

Remarks: (Include photo numbers here or on a separate sheet.)
 Bare ground and leaf litter = 49%

SOIL

Sampling Point: DPU6

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mucky Marsh City/County: Oswego County Sampling Date: 8-14-2020
 Applicant/Owner: Ducks Unlimited State: NY Sampling Point: DPU7
 Investigator(s): Patrick Raney and John Fraser Section, Township, Range: _____
 Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): convex Slope %: 0
 Subregion (LRR or MLRA): LRR R Lat: 43°24'18.240 Long: 76°33'42.453 Datum: WGS84
 Soil Map Unit Name: Carlisle Muck (Ce) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply)		<u>Secondary Indicators</u> (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <u>X</u>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Upland datapoint

VEGETATION – Use scientific names of plants.

 Sampling Point: DPU7

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ =Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>3</u></td> <td>x 2 = <u>6</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>68</u></td> <td>x 4 = <u>272</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>76</u> (A)</td> <td><u>293</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.86</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>3</u>	x 2 = <u>6</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>68</u>	x 4 = <u>272</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>76</u> (A)	<u>293</u> (B)	Prevalence Index = B/A = <u>3.86</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>3</u>	x 2 = <u>6</u>																			
FAC species <u>5</u>	x 3 = <u>15</u>																			
FACU species <u>68</u>	x 4 = <u>272</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>76</u> (A)	<u>293</u> (B)																			
Prevalence Index = B/A = <u>3.86</u>																				
_____ =Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ =Total Cover				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
_____ =Total Cover																				
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Oenothera biennis</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
2. <u>Melilotus officinalis</u>	<u>2</u>	<u>No</u>	<u>FACU</u>																	
3. <u>Acer negundo</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
4. <u>Cyperus esculentus</u>	<u>3</u>	<u>No</u>	<u>FACW</u>																	
5. <u>Chenopodium album</u>	<u>61</u>	<u>Yes</u>	<u>FACU</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
_____ =Total Cover				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
_____ =Total Cover																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____ =Total Cover																				

 Remarks: (Include photo numbers here or on a separate sheet.)
 Bare ground and leaf litter = 49%

SOIL

Sampling Point: DPU7

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mucky Marsh City/County: Oswego County Sampling Date: 8-14-2020
 Applicant/Owner: Ducks Unlimited State: NY Sampling Point: DPU8
 Investigator(s): Patrick Raney and John Fraser Section, Township, Range: _____
 Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): convex Slope %: _____
 Subregion (LRR or MLRA): LRR R Lat: 43°24'28.833 Long: 76°33'57.355 Datum: WGS84
 Soil Map Unit Name: Scriba Gravelly Loam (ScB) NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply) _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators</u> (minimum of two required) _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) <u>x</u> Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Upland datapoint

VEGETATION – Use scientific names of plants.

Sampling Point: DPU8

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Rhamnus cathartica</u>	<u>7</u>	<u>No</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)																
2. <u>Ulmus americana</u>	<u>25</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Acer saccharum</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>62</u>		<u>=Total Cover</u>		Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>33</u></td> <td>x 2 = <u>66</u></td> </tr> <tr> <td>FAC species <u>35</u></td> <td>x 3 = <u>105</u></td> </tr> <tr> <td>FACU species <u>55</u></td> <td>x 4 = <u>220</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>123</u> (A)</td> <td><u>391</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.18</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>33</u>	x 2 = <u>66</u>	FAC species <u>35</u>	x 3 = <u>105</u>	FACU species <u>55</u>	x 4 = <u>220</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>123</u> (A)	<u>391</u> (B)	Prevalence Index = B/A = <u>3.18</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>33</u>	x 2 = <u>66</u>																			
FAC species <u>35</u>	x 3 = <u>105</u>																			
FACU species <u>55</u>	x 4 = <u>220</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>123</u> (A)	<u>391</u> (B)																			
Prevalence Index = B/A = <u>3.18</u>																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Rhamnus cathartica</u>	<u>8</u>	<u>Yes</u>	<u>FAC</u>																	
2. <u>Lonicera tatarica</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Ulmus americana</u>	<u>8</u>	<u>Yes</u>	<u>FACW</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>31</u>		<u>=Total Cover</u>																		
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Toxicodendron radicans</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Rosa multiflora</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
3. <u>Lonicera tatarica</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>30</u>		<u>=Total Cover</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____		<u>=Total Cover</u>		Hydrophytic Vegetation Present? Yes <u>X</u> No _____																

Remarks: (Include photo numbers here or on a separate sheet.)
 Bare ground and leaf litter = 70%

SOIL

Sampling Point: DPU8

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mucky Marsh City/County: Oswego County Sampling Date: 8-15-2020
 Applicant/Owner: Ducks Unlimited State: NY Sampling Point: DPW1
 Investigator(s): Patrick Raney and John Fraser Section, Township, Range: _____
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): None Slope %: 0
 Subregion (LRR or MLRA): LRR R Lat: 43°24'22.816 Long: 76°33'52.581 Datum: WGS84
 Soil Map Unit Name: Carlisle Muck (Ce) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>x</u> No _____	Is the Sampled Area within a Wetland? Yes <u>x</u> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply)		<u>Secondary Indicators</u> (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 No direct hydrology present.

VEGETATION – Use scientific names of plants.

Sampling Point: DPW1

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
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Prevalence Index = B/A = <u>2.33</u>																				
_____ =Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ =Total Cover																				
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Rumex crispus</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Echinochloa esculenta</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Bidens frondosa</u>	<u>9</u>	<u>No</u>	<u>FACW</u>																	
4. <u>Symphyotrichum puniceum</u>	<u>28</u>	<u>Yes</u>	<u>OBL</u>																	
5. <u>Ranunculus septentrionalis</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>67</u> =Total Cover																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____ =Total Cover																				

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DPW1

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mucky Marsh City/County: Oswego County Sampling Date: 8-14-2020
 Applicant/Owner: Ducks Unlimited State: NY Sampling Point: DPW2
 Investigator(s): Patrick Raney and John Fraser Section, Township, Range: _____
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): None Slope %: 0
 Subregion (LRR or MLRA): LRR R Lat: 43°24'21.527 Long: 76°33'52.581 Datum: WGS84
 Soil Map Unit Name: Carlisle Muck (Ce) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>x</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>x</u> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) <u>x</u> Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) <u>X</u> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 No evidence of hydrology, however hydric soils and hydric vegetation present.

VEGETATION – Use scientific names of plants.

 Sampling Point: DPW2

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
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Prevalence Index = B/A = <u>2.31</u>																				
			=Total Cover																	
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
			=Total Cover																	
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Cyperus esculentus</u>	<u>65</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>X</u> <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Artemisia vulgaris</u>	<u>10</u>	<u>No</u>	<u>UPL</u>																	
3. <u>Polygonum pensylvanicum</u>	<u>4</u>	<u>No</u>	<u>FACW</u>																	
4. <u>Symphyotrichum puniceum</u>	<u>4</u>	<u>No</u>	<u>OBL</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
			83 =Total Cover																	
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
			=Total Cover																	
Remarks: (Include photo numbers here or on a separate sheet.)																				

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes x No

SOIL

Sampling Point: DPW2

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mucky Marsh City/County: Oswego County Sampling Date: 8-15-2020
 Applicant/Owner: Ducks Unlimited State: NY Sampling Point: DPW3
 Investigator(s): Patrick Raney and John Fraser Section, Township, Range: _____
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): None Slope %: 0
 Subregion (LRR or MLRA): LRR R Lat: 43°24'22.816 Long: 76°33'52.581 Datum: WGS84
 Soil Map Unit Name: Carlisle Muck (Ce) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>x</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>x</u> No _____ If yes, optional Wetland Site ID: <u>W-C</u>
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) <u>x</u> Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) <u>X</u> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 No evidence of hydrology, however hydric soils and hydric vegetation present.

VEGETATION – Use scientific names of plants.

Sampling Point: DPW3

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
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1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
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_____ =Total Cover																				
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Cyperus esculentus</u>	<u>80</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Artemisia vulgaris</u>	<u>5</u>	<u>No</u>	<u>UPL</u>																	
3. <u>Polygonum pensylvanicum</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
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_____ =Total Cover																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____ =Total Cover																				

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DPW3

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mucky Marsh City/County: Oswego County Sampling Date: 8-14-2020
 Applicant/Owner: Ducks Unlimited State: NY Sampling Point: DPW4
 Investigator(s): Patrick Raney and John Fraser Section, Township, Range: _____
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): None Slope %: 0
 Subregion (LRR or MLRA): LRR R Lat: 43°24'16.982 Long: 76°33'41.462 Datum: WGS84
 Soil Map Unit Name: Carlisle Muck (Ce) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>x</u> No _____	Is the Sampled Area within a Wetland? Yes <u>x</u> No _____ If yes, optional Wetland Site ID: <u>W-D</u>
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply)		<u>Secondary Indicators</u> (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 No evidence of hydrology, however hydric soils and hydric vegetation present.

VEGETATION – Use scientific names of plants.

Sampling Point: DPW4

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ =Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <thead> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>90</u></td> <td>x 2 = <u>180</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>4</u></td> <td>x 4 = <u>16</u></td> </tr> <tr> <td>UPL species <u>2</u></td> <td>x 5 = <u>10</u></td> </tr> <tr> <td>Column Totals: <u>96</u> (A)</td> <td><u>206</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.15</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>90</u>	x 2 = <u>180</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>4</u>	x 4 = <u>16</u>	UPL species <u>2</u>	x 5 = <u>10</u>	Column Totals: <u>96</u> (A)	<u>206</u> (B)	Prevalence Index = B/A = <u>2.15</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>90</u>	x 2 = <u>180</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>4</u>	x 4 = <u>16</u>																			
UPL species <u>2</u>	x 5 = <u>10</u>																			
Column Totals: <u>96</u> (A)	<u>206</u> (B)																			
Prevalence Index = B/A = <u>2.15</u>																				
_____ =Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ =Total Cover				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
_____ =Total Cover																				
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Cyperus esculentus</u>	<u>90</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Artemisia vulgaris</u>	<u>2</u>	<u>No</u>	<u>UPL</u>																	
3. <u>Ambrosia artemisiifolia</u>	<u>4</u>	<u>No</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
_____ =Total Cover																				
Woody Vine Stratum (Plot size: <u>30</u>)				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____ =Total Cover																				

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DPW4

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mucky Marsh City/County: Oswego County Sampling Date: 8-14-2020
 Applicant/Owner: Ducks Unlimited State: NY Sampling Point: DPW5
 Investigator(s): Patrick Raney and John Fraser Section, Township, Range: _____
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): None Slope %: 0
 Subregion (LRR or MLRA): LRR R Lat: 43°24'15.414 Long: 76°33'38.686 Datum: WGS84
 Soil Map Unit Name: Scriba Gravelly silt loam NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>x</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>x</u> No _____ If yes, optional Wetland Site ID: <u>W-F</u>
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) </div> <div style="width: 50%;"> <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes <u>x</u> No _____ Depth (inches): <u>4</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Forested wetland with a rocky stream-bed outlet that was dry.

VEGETATION – Use scientific names of plants.

Sampling Point: DPW5

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Fraxinus pennsylvanica</u>	<u>65</u>	<u>Yes</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. <u>Acer rubrum</u>	<u>22</u>	<u>Yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>87</u>	=Total Cover	Prevalence Index worksheet: <table style="width: 100%;"> <thead> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>75</u></td> <td>x 1 = <u>75</u></td> </tr> <tr> <td>FACW species <u>89</u></td> <td>x 2 = <u>178</u></td> </tr> <tr> <td>FAC species <u>24</u></td> <td>x 3 = <u>72</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>188</u> (A)</td> <td><u>325</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>1.73</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>75</u>	x 1 = <u>75</u>	FACW species <u>89</u>	x 2 = <u>178</u>	FAC species <u>24</u>	x 3 = <u>72</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>188</u> (A)	<u>325</u> (B)	Prevalence Index = B/A = <u>1.73</u>	
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FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>188</u> (A)	<u>325</u> (B)																			
Prevalence Index = B/A = <u>1.73</u>																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Fraxinus pennsylvanica</u>	<u>4</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Lindera benzoin</u>	<u>12</u>	<u>Yes</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>16</u>	=Total Cover	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>X</u> <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Saururus cernuus</u>	<u>65</u>	<u>Yes</u>	<u>OBL</u>																	
2. <u>Osmunda regalis</u>	<u>6</u>	<u>No</u>	<u>OBL</u>																	
3. <u>Urtica dioica</u>	<u>2</u>	<u>No</u>	<u>FAC</u>																	
4. <u>Glyceria canadensis</u>	<u>4</u>	<u>No</u>	<u>OBL</u>																	
5. <u>Thalictrum pubescens</u>	<u>8</u>	<u>No</u>	<u>FACW</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>85</u>	=Total Cover	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		_____	=Total Cover																	

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DPW5

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mucky Marsh City/County: Oswego County Sampling Date: 8-14-2020
 Applicant/Owner: Ducks Unlimited State: NY Sampling Point: DPW6
 Investigator(s): Patrick Raney and John Fraser Section, Township, Range: _____
 Landform (hillside, terrace, etc.): depression on hill Local relief (concave, convex, none): concave Slope %: 0
 Subregion (LRR or MLRA): LRR R Lat: 43°24'17.124 Long: 76°33'36.485 Datum: WGS84
 Soil Map Unit Name: Ira gravelly fine sandy loam (IrB) NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>x</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>x</u> No _____	Is the Sampled Area within a Wetland? Yes <u>x</u> No _____ If yes, optional Wetland Site ID: <u>W-G</u>
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply) _____ Surface Water (A1) <u>x</u> Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) <u>x</u> Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) <u>x</u> Drift Deposits (B3) _____ Presence of Reduced Iron (C4) <u>x</u> Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) <u>x</u> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators</u> (minimum of two required) <u>x</u> Surface Soil Cracks (B6) <u>x</u> Drainage Patterns (B10) <u>x</u> Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) <u>x</u> Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) <u>X</u> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes <u>x</u> No _____ Depth (inches): <u>2</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>x</u> No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Vernal Pool.

VEGETATION – Use scientific names of plants.

Sampling Point: DPW6

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	<u>35</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83.3%</u> (A/B)																
2. <u>Prunus serotina</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Fraxinus pennsylvanica</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>80</u>	=Total Cover	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>52</u></td> <td>x 2 = <u>104</u></td> </tr> <tr> <td>FAC species <u>37</u></td> <td>x 3 = <u>111</u></td> </tr> <tr> <td>FACU species <u>25</u></td> <td>x 4 = <u>100</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>114</u> (A)</td> <td><u>315</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.76</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>52</u>	x 2 = <u>104</u>	FAC species <u>37</u>	x 3 = <u>111</u>	FACU species <u>25</u>	x 4 = <u>100</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>114</u> (A)	<u>315</u> (B)	Prevalence Index = B/A = <u>2.76</u>	
Total % Cover of:	Multiply by:																			
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FACW species <u>52</u>	x 2 = <u>104</u>																			
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Column Totals: <u>114</u> (A)	<u>315</u> (B)																			
Prevalence Index = B/A = <u>2.76</u>																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Ilex verticillata</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>15</u>	=Total Cover	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>X</u> <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Thelypteris palustris</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Ilex verticillata</u>	<u>4</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Urtica dioica</u>	<u>2</u>	<u>No</u>	<u>FAC</u>																	
4. <u>Carex intumescens</u>	<u>3</u>	<u>No</u>	<u>FACW</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>19</u>	=Total Cover	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		_____	=Total Cover																	

Remarks: (Include photo numbers here or on a separate sheet.)
 Vernal pool with 81% bare ground covered with stained leaves.

SOIL

Sampling Point: DPW6

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mucky Marsh City/County: Oswego County Sampling Date: 8-14-2020
 Applicant/Owner: Ducks Unlimited State: NY Sampling Point: DPW7
 Investigator(s): Patrick Raney and John Fraser Section, Township, Range: _____
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): None Slope %: 0
 Subregion (LRR or MLRA): LRR R Lat: 43°24'18.372 Long: 76°33'40.003 Datum: WGS84
 Soil Map Unit Name: Carlisle Muck (Ce) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>x</u> No _____	Is the Sampled Area within a Wetland? Yes <u>x</u> No _____ If yes, optional Wetland Site ID: <u>W-G</u>
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>x</u> No _____	
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply)		<u>Secondary Indicators</u> (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes <u>x</u> No _____ Depth (inches): <u>12</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>x</u> No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 A remnant wetland within a drained muckland.

VEGETATION – Use scientific names of plants.

Sampling Point: DPW7

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ =Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <thead> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>78</u></td> <td>x 2 = <u>156</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>4</u></td> <td>x 4 = <u>16</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>82</u> (A)</td> <td><u>172</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.10</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>78</u>	x 2 = <u>156</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>4</u>	x 4 = <u>16</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>82</u> (A)	<u>172</u> (B)	Prevalence Index = B/A = <u>2.10</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>78</u>	x 2 = <u>156</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
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UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>82</u> (A)	<u>172</u> (B)																			
Prevalence Index = B/A = <u>2.10</u>																				
_____ =Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ =Total Cover																				
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Cyperus esculentus</u>	<u>78</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>X</u> <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Portulaca oleracea</u>	<u>3</u>	<u>No</u>	<u>FACU</u>																	
3. <u>Populus tremuloides</u>	<u>1</u>	<u>No</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>82</u> =Total Cover																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____ =Total Cover																				
Remarks: (Include photo numbers here or on a separate sheet.)																				

SOIL

Sampling Point: DPW7

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mucky Marsh City/County: Oswego County Sampling Date: 8-26-2020
 Applicant/Owner: Ducks Unlimited State: NY Sampling Point: DPW8
 Investigator(s): Patrick Raney and John Fraser Section, Township, Range: _____
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): None Slope %: 0
 Subregion (LRR or MLRA): LRR R Lat: 43°24'27.678 Long: 76°33'47.537 Datum: WGS84
 Soil Map Unit Name: Sun loam (Su) NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>x</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>x</u> No _____	Is the Sampled Area within a Wetland? Yes <u>x</u> No _____ If yes, optional Wetland Site ID: <u>W-H</u>
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators</u> (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u>x</u> No _____ Depth (inches): <u>3</u> Water Table Present? Yes <u>x</u> No _____ Depth (inches): <u>3</u> Saturation Present? Yes <u>x</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>x</u> No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A shallow wetland with dead trees, sampling point was on a higher spot; some areas of permanent standing water = 70% of wetland area, 30% of wetland was vegetated.

VEGETATION – Use scientific names of plants.

Sampling Point: DPW8

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ =Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <thead> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>89</u></td> <td>x 1 = <u>89</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>94</u> (A)</td> <td><u>99</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>1.05</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>89</u>	x 1 = <u>89</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>94</u> (A)	<u>99</u> (B)	Prevalence Index = B/A = <u>1.05</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>89</u>	x 1 = <u>89</u>																			
FACW species <u>5</u>	x 2 = <u>10</u>																			
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FACU species <u>0</u>	x 4 = <u>0</u>																			
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Column Totals: <u>94</u> (A)	<u>99</u> (B)																			
Prevalence Index = B/A = <u>1.05</u>																				
_____ =Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ =Total Cover				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
_____ =Total Cover																				
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Leersia oryzoides</u>	<u>80</u>	<u>Yes</u>	<u>OBL</u>																	
2. <u>Bidens cernua</u>	<u>5</u>	<u>No</u>	<u>OBL</u>																	
3. <u>Carex gynandra</u>	<u>4</u>	<u>No</u>	<u>OBL</u>																	
4. <u>Polygonum pensylvanicum</u>	<u>2</u>	<u>No</u>	<u>FACW</u>																	
5. <u>Lysimachia nummularia</u>	<u>2</u>	<u>No</u>	<u>FACW</u>																	
6. <u>Onoclea sensibilis</u>	<u>1</u>	<u>No</u>	<u>FACW</u>																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>94</u> =Total Cover																				
Woody Vine Stratum (Plot size: <u>30</u>)				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____ =Total Cover																				

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DPW8

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mucky Marsh City/County: Oswego County Sampling Date: 8-29-2020
 Applicant/Owner: Ducks Unlimited State: NY Sampling Point: DPW1
 Investigator(s): Patrick Raney Section, Township, Range: _____
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): None Slope %: 0
 Subregion (LRR or MLRA): LRR R Lat: 43°24'20.13 Long: 76°33'48.71 Datum: WGS84
 Soil Map Unit Name: Carlisle Muck (Ce) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>x</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>0</u> No <u>x</u>	Is the Sampled Area within a Wetland? Yes <u>x</u> No _____ If yes, optional Wetland Site ID: <u>W-J</u>
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) <u>x</u> Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>x</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: No direct hydrology present.	

VEGETATION – Use scientific names of plants.

 Sampling Point: DPW1

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>45</u></td> <td>x 2 = <u>90</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>32</u></td> <td>x 4 = <u>128</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>77</u> (A)</td> <td><u>218</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.83</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>45</u>	x 2 = <u>90</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>32</u>	x 4 = <u>128</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>77</u> (A)	<u>218</u> (B)	Prevalence Index = B/A = <u>2.83</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
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Column Totals: <u>77</u> (A)	<u>218</u> (B)																			
Prevalence Index = B/A = <u>2.83</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Polygonum pensylvanicum</u>	<u>33</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u>Problematic Hydrophytic Vegetation</u> ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u> x </u> No <u> </u>																
2. <u>Echinochloa esculenta</u>	<u>22</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Bidens frondosa</u>	<u>12</u>	<u>No</u>	<u>FACW</u>																	
4. <u>Taraxacum officinale</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		77 =Total Cover																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		=Total Cover																		

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point DPW1

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mucky Marsh City/County: Oswego County Sampling Date: 8-29-2020
 Applicant/Owner: Ducks Unlimited State: NY Sampling Point: DPW10
 Investigator(s): Patrick Raney Section, Township, Range: _____
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): None Slope %: 0
 Subregion (LRR or MLRA): LRR R Lat: 43°24'17.79 Long: 76°33'43.49 Datum: WGS84
 Soil Map Unit Name: Carlisle Muck (Ce) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>x</u> No _____	Is the Sampled Area within a Wetland? Yes <u>x</u> No _____ If yes, optional Wetland Site ID: <u>W-I</u>
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ x Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ X FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No evidence of hydrology, however hydric soils and hydric vegetation present.		

VEGETATION – Use scientific names of plants.

 Sampling Point: DPW10

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>58</u></td> <td>x 2 = <u>116</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>20</u></td> <td>x 5 = <u>100</u></td> </tr> <tr> <td>Column Totals: <u>78</u> (A)</td> <td><u>216</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.77</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>58</u>	x 2 = <u>116</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>20</u>	x 5 = <u>100</u>	Column Totals: <u>78</u> (A)	<u>216</u> (B)	Prevalence Index = B/A = <u>2.77</u>	
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Prevalence Index = B/A = <u>2.77</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Cyperus esculentus</u>	<u>25</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u> x </u> No <u> </u>																
2. <u>Artemisia vulgaris</u>	<u>20</u>	<u>Yes</u>	<u>UPL</u>																	
3. <u>Polygonum pensylvanicum</u>	<u>33</u>	<u>Yes</u>	<u>FACW</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
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10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		78 =Total Cover																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		=Total Cover																		

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point DPW10

[illegible]

Wetland Datapoints



DPW1. Emergent wetland W-A was dominated by yellow nutsedge (*Cyperinus esculentus*) and *Bidens frondosa*. No direct hydrological indicators were present, however the soils met diagnostic conditions for hydrology (depleted below dark surface, muck/peat depth requirements). Pictured Aug. 14, 2020.



DPW2 W-B Emergent wetland W-A was dominated by yellow nutsedge (*Cyperinus esculentus*) and *Bidens frondosa*. No direct hydrological indicators were present, however the soils met diagnostic conditions for hydrology (depleted below dark surface, muck/peat depth requirements). Pictured Aug. 14, 2020.



DPW3. This portion of emergent wetland W-C was dominated by *C. esculentus*. Similar indicators to W-A were present. Aug. 14, 2021



DPW4. Wetland W-D.



DPW5. Forested wetland W-F had mucky soils with royal fern, lizard tail, and cardinal flower present as hydrophytes. Pictured August 14, 2020.



DPW6 Was a vernal pool (W-G) with sparsely vegetated concave surface and no standing water.



DPW7. Wetland W-E was dominated by common *C. esculentus*. July 2020.



DPW8. This portion of emergent wetland W-H had sparse tree cover <15% and had several emergent hydrophytes including rice cutgrass (*Leersia oryzoides*), *Bidens cernua*, *Carex gynandra*, *Polygonum pennsylvanicum*.



DPW9. Emergent wetland W-8 was dominated by teal love grass (*Eragrostis hypnoides*). Secondary hydrology indicators included geomorphic position and FAC-neutral test. A depleted matrix was the hydric soil indicator.



DPW10. Forested wetland W-I was dominated by Pennsylvania Smartweed (*Polygonum pennsylvanicum*).



P-1 (Pond) Existing ponds on site are being used by waterfowl such as the juvenal wood ducks pictured.



P-2 (Pond) Appears to be a manmade pond established sometime in the 1970's. Similarly, waterfowl have been frequenting this pond.

Upland Datapoints



Conditions at the Site in July 2020. The site was mowed to facilitate topographic survey.



DPU1. This area was dominated by white clover (*Trifolium repens*) and large barnyard grass (*Echinochloa crus-galli*).



DPU2. This area was dominated by English plantain (*Plantago lanceolata*).



DPU3. This area was dominated by English plantain *Chenopodium album*, *Portulaca oleracea*, and *Ambrosia artemesifolia*. All FAC-U species.



DPU4. A forested knoll with *Rubus pensilvanicus*, *Allaria petiolate* as the dominants with *Acer negundo* and *Populus deltoides* as the tree species present. Soils were dry and well-drained.



DPU5. This area was dominated by red clover (*Trifolium pratense*) and English plantain (*Plantago lanceolata*).



DPU6. This was a well-drained upland with black cherry and sugar maple as the dominant trees.



DPU7. This area was dominated by Canadian thistle (*Cirsium arvense*), perennial ragweed (*Ambrosia psilostachya*), prickly comfrey (*Symphytum asperum*), and common dandelion (*Taraxacum officinale*).



DPU8. Dominated by multiflora rose, bush honeysuckle and poison ivy in the understory. American elm, and sugar maple were dominants in the overstory.

Streams and Linear Aquatic Resource Features



View of Snake Creek (S-1) in the interior of the property on July 21, 2020 Flow direction is South to North, the stream has consistently had standing water in all site visits.



S-2 is a tributary to Snake Creek that originates offsite within in W-F shown in this image taken on August 14, 2020. S-2 appears to have seasonally intermittent flow and flows from Southeast to Northwest.



D-1 has steady standing water present. This view is looking West to East in the direction of flow. This ditch intercepts Snake Creek. DU Engineer Tamara Jameson examines soil conditions along the margin of the ditch. DU has proposed to pull back the side slope to the south (righthand side of image) to reduce the chance ditch sloughing.



D-2 is a shallow interior ditch that appears to carry water from tile lines to Snake Creek. This ditch has been obscured by vegetation Joe-pye weed, (*Eutrochium maculatum*) and other hydrophytes during site visits.



D-3 is a shallow interior ditch that carries water to Snake Creek, water outlets through a culvert into Snake Creek. It is approximately 2 feet deep. Here pictured after a heavy rain event in July 2019 while the site was still being tilled and farmed. Flow is from SE to NW into Snake Creek.



D-4 is a shallow interior ditch that carries water to Snake Creek, water outlets through a culvert into Snake Creek. It is approximately 2 feet deep.



D-5 is a perimeter ditch that carries stormwater to Snake Creek. John Fraser stands in the ditch on August 14, 2021.



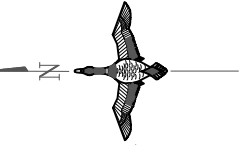
D-6 DU biologist John Fraser stands in the shallow interior ditch that is roughly 2-feet deep. August 14, 2020. D-6 appears to carry water to Snake Creek during precipitation events.



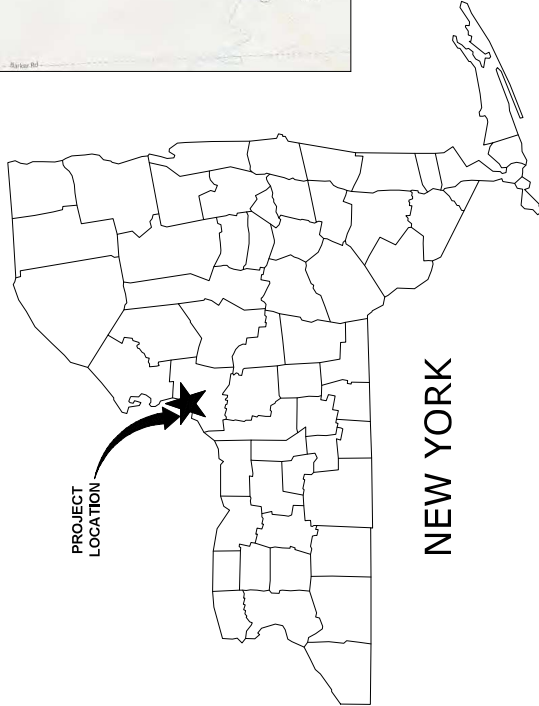
D-7 Is a shallow surficial ditch that carries overland flow during precipitation events to Snake Creek. Pictured August 14, 2020.



D-8 Is an old ditch that carries water from an adjacent agricultural field to Snake Creek. It flows from West to East. This ditch is along the northern property boundary.



PROJECT
DUCKS UNLIMITED
MUCKY MARSH COMPENSATORY
MITIGATION SITE
IRONDEQUOIT-NINE MILE CREEK SERVICE AREA,
OSWEGO COUNTY, NEW YORK



NEW YORK



PROJECT LOCATION
(CONT'G) 24° 24' N, LONG: 76° 33' 34" W



Dig Safe! New York
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■ Confirm Utility Response
■ Dig with Care
800-962-7962
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MUCKY MARSH COMPENSATORY
MITIGATION SITE
IRONDEQUOIT-NINE MILE CREEK
SERVICE AREA
OSWEGO, OSWEGO CO., NY

SHEET INDEX

1. COVER SHEET
2. ESTIMATED QUANTITIES, SPECIFICATIONS, & NOTES
3. WETLAND DELINEATION
4. OVERALL SITE PLAN
5. WEST FIELD SITE PLAN
6. EAST FIELD SITE PLAN
7. CONSTRUCTION DETAILS
8. EROSION AND SEDIMENT CONTROL PLAN
9. EROSION AND SEDIMENT CONTROL DETAILS
10. SITE RESTORATION PLAN
11. PLANTING DETAILS AND NOTES
12. CREDIT GENERATION PLAN
13. MONITORING PLAN
- 14.

FOR PERMIT



ARCADIS
ARCADIS OF NEW YORK, INC.
110 West Fayette Street, Suite 300
Rochester, NY 14614
Tel: 215.446.8325

THOMAS STEINER
Professional Engineer No. 58972
State: NY

SIGNED: 6/21/2021



THOMAS STEINER
Professional Engineer No. 58972
State: NY

CAD FILE:

DESIGNED BY: JF
DRAWN BY: JF
CHECKED BY: JF
APPROVED BY: JF
DATE: 6-18-2021

PROJECT NUMBER: 000-24254
SHEET: 14 OF 14

REVISIONS

ISSUED FOR PERMIT REVIEW
06/18/2021
BY: JF

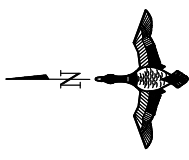
GLADWIN-774-01

GREAT LAKES/ATLANTIC REGIONAL OFFICE
7322 NEWMAN BOULEVARD, BUILDING 1
DEXTER, MICHIGAN 48130
(734) 623-2000 www.ducks.org



MUCKY MARSH COMPENSATORY
MITIGATION SITE
IRONDEQUOIT-NINE MILE CREEK
SERVICE AREA
OSWEGO, OSWEGO CO., NY

Revision	Date	By
0	06/18/2021	JF



- LEGEND**
- EXISTING GRADE MAJOR CONTOUR (5' INTERVAL)
 - EXISTING GRADE MINOR CONTOUR (1' INTERVAL)
 - EXISTING SPOT ELEVATION
 - EXISTING ACCESS ROAD
 - PROPERTY LINE
 - EXISTING STREAM CENTERLINE
 - EXISTING DITCH CENTERLINE
 - CONSERVATION EASEMENT BOUNDARY (COINCIDENT WITH PROPERTY LINE)
 - EXISTING MONITORING WELL
 - EXISTING SOIL BORING
 - UPLAND DATA POINT
 - WETLAND DELINEATION DATA POINT
 - EXISTING CULVERT
 - EXISTING DELINEATED WETLAND

- NOTES**
- SEE DRAWING J FOR ADDITIONAL BASEMAP INFORMATION.
 - WETLAND DELINEATION PERFORMED AND PROVIDED BY DUCKS UNLIMITED AUGUST 2020.

WETLAND ID	WETLAND TYPE	WETLAND (ACRES)	DATA POINTS
WETLAND A	PEM	0.11	DW-1
WETLAND B	PEM	0.11	DW-2
WETLAND C	PEM	0.05	DW-3
WETLAND D	PEM	0.06	DW-4
WETLAND E	PEM	0.02	DW-7
WETLAND F	PEM	1.19	DW-5
WETLAND G	PEM	0.06	DW-6
WETLAND H	PEM	0.11	DW-10
WETLAND I	PEM	0.06	DW-9
WETLAND J	PEM	0.06	DW-8
WETLAND P-1	OPEN WATER	1.25	-
WETLAND P-2	OPEN WATER	1.25	-

WETLANDS EXTENDING OFF THE PROPERTY:
WETLAND F CONTINUES OFF OF THE PROPERTY ACROSS THE EASTERN BORDER.
WETLAND H CONTINUES OFF OF THE PROPERTY ACROSS THE NORTHERN BORDER.

STREAM/DITCH INVENTORY TABLE	UNSAT. FEET
S-1 SHADY CREEK	2359
S-2 INTERIOR DITCH (TRIBUTARY TO SHADY CREEK)	2293
D-1 WEST TO EAST DITCH	1246
D-2 INTERIOR DITCH	1160
D-3 INTERIOR DITCH	467
D-4 EAST TO WEST DITCH	1238
D-5 INTERIOR DITCH	411
D-6 INTERIOR DITCH	859
D-7 WEST TO EAST DITCH	1085

FOR PERMIT

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF EARTH AND FORESTRY

ARCADIS
ARCADIS OF NEW YORK, INC.
110 West Fayette Street, Suite 300
New York, NY 10014
Tel: 212.446.1325

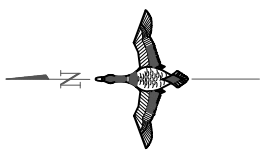
THOMAS STEINER
Professional Engineer No. 3005018
New York State Education Law
6-15-2021

CAD FILE:
DRAWN BY: JWP
CHECKED BY: JWP
DESIGNED BY: JWP
SURVEYED BY: GSB & P
BLOOMER: JF (DU)
DATE: 6-15-2021
PROJECT NUMBER: USNY-23254
GLADWIN-774-03



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LEGEND

- EXISTING GRADE MAJOR CONTOUR (5' INTERVAL)
- EXISTING GRADE MINOR CONTOUR (1' INTERVAL)
- EXISTING SPOT ELEVATION
- PROPERTY LINE
- EXISTING STREAM CENTERLINE
- EXISTING DITCH CENTERLINE
- CONSERVATION EASEMENT BOUNDARY (CONCIDENT WITH PROPERTY LINE)
- PROPOSED FINAL GRADE CONTOUR
- EXISTING MONITORING WELL
- MHW
- EXISTING SOIL BORING
- EXISTING CULVERT
- PROPOSED FINAL GRADE SPOT ELEVATION
- EXISTING BENCHMARK
- TILE DRAIN EXPLANATION TRENCH (SEE DETAIL 2 ON DRAWING 7)
- EXISTING DELUGATED WETLAND
- PROPOSED FILL
- PROPOSED SCRAPE/FORM/SFLOVER AREA
- PROPOSED HAMMOCK-AND-HOLLOW GRADING (SEE DETAIL 5 ON DRAWING 7)

NOTES

- SEE DRAWING 4 FOR BASEMAP INFORMATION.
- CONTRACTOR SHALL ACHIEVE DESIGNATED DITCH PLUG AND SPILLOVER ELEVATIONS TO WITHIN +/- 0.10 FT.
- WORK SHALL BE PERFORMED UNDER OVERSIGHT OF A FIELD ENGINEER, AND SEE AND SHAPE OF SCRAPE AND FILL AREAS COULD CHANGE TO ACCOUNT FOR CONDITIONS OBSERVED IN THE FIELD.
- CAD FILES CAN BE PROVIDED TO THE CONTRACTOR FOR CONSTRUCTION STAKING AND LAYOUT PURPOSES IF NEEDED.
- AREAS INCLUDING GRADING SHALL BE FINISHED TO THE GRADIES SHOWN ON THE PLAN. ALL AREAS INCLUDING GRADING SHALL BE FINISHED WITHIN A MINIMUM OF 10 FEET OF A LOOSE CONDITION.
- IF SAND IS ENCOUNTERED DURING CONSTRUCTION OF SPILLOVER AREAS, CONTRACTOR SHALL OVERPAVEMENT A MINIMUM OF 2 FEET AND REPLACE WITH COMPACTED MUCK BOILS. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING WITHIN EXISTING DITCHES IN SOIL PLUG AREAS AS NEEDED. DEWATERING SHALL BE CONDUCTED IN ACCORDANCE WITH THE DU STANDARD SPECIFICATION FOR CONSTRUCTION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING WITHIN EXISTING DITCHES IN SOIL PLUG AREAS AS NEEDED. DEWATERING SHALL BE CONDUCTED IN ACCORDANCE WITH THE DU STANDARD SPECIFICATION FOR CONSTRUCTION.

WEST FIELD SITE PLAN

Revision	0
ISSUED FOR PERMIT REVIEW	06/18/2021
Date	06/18/2021
By	ERT

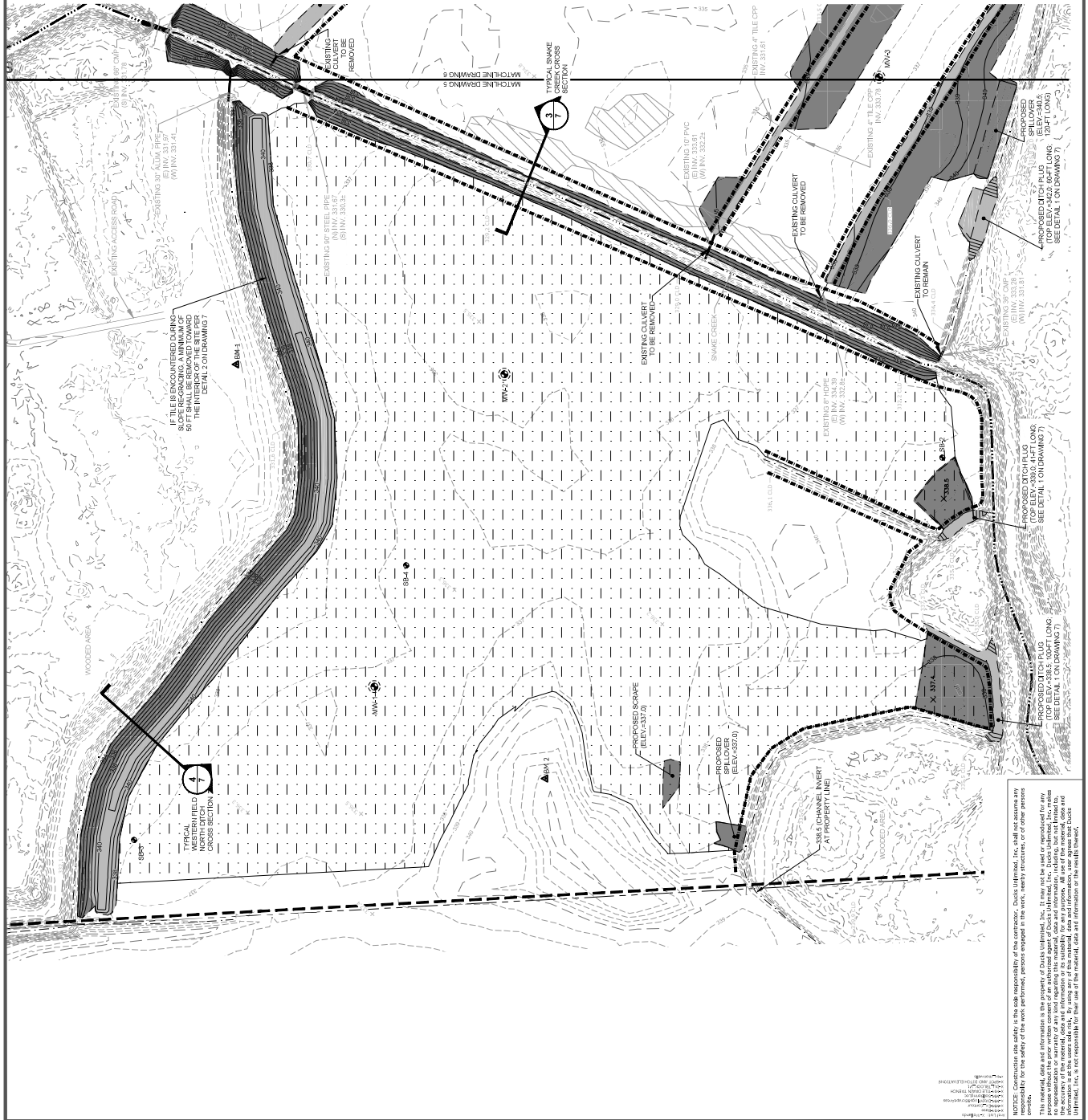
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FOR PERMIT

ARCADIS
ARCADIS OF NEW YORK, INC.
110 West Fayette Street, Suite 300
New York, NY 10037
Tel: 212.446.1325

THOMAS STEINER
Professional Engineer No. 3005818
State: NY

GLADWIN-73-45



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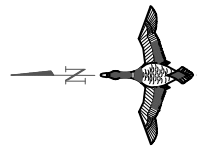
EAST FIELD SITE PLAN

0	ISSUED FOR PERMIT REVIEW	06/18/2021	DATE	BY	ERT

CAD FILE:

DESIGNED BY: NWPF
DRAWN BY: KLS
SURVEYED BY: GB & JP
BIOLOGIST: JF (DU)
DATE: 5-18-2004

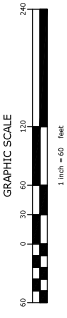
0-10-2021
PROJECT NUMBER:
US-NY-235-2
GLARO-NY1-73-06



- | LEGEND | |
|--------|---|
| | EXISTING GRADE MAJOR CONTOUR
(5' INTERVAL) |
| | EXISTING GRADE MINOR CONTOUR
(1' INTERVAL) |
| | EXISTING SPOT ELEVATION |
| | PROPERTY LINE |
| | EXISTING STREAM CENTERLINE |
| | EXISTING DITCH CENTERLINE |
| | CONSERVATION EASEMENT BOUNDARY
(COINCIDENT WITH PROPERTY LINE) |
| | PROPOSED FINAL GRADE CONTOUR |
| | EXISTING MONITORING WELL |
| | EXISTING SOIL BORING |
| | EXISTING CULVERT |
| | TILE DRAIN EXPOSATION TRENCH
(SEE DETAIL 2 ON DRAWING 2) |
| | EXISTING DELINEATED WETLAND |
| | PROPOSED FILL |
| | PROPOSED
SCARP/BORROW/SPILLOVER AREA |
| | PROPOSED MAINTENANCE-LEVEL
GRADINGS (SEE DETAIL 5 ON DRAWING
2) |

NOTES

1. SEE DRAWING FOR BASEPANEL INFORMATION.
2. CONTRACTOR SHALL ACHIEVE DESPATED, DITCH PLUG AND SPILLOVER ELEVATIONS TO WITHIN ±0.10 FT.
3. WORK SHALL BE PERFORMED UNDER OVERSIGHT OF FIELD ENGINEER AND SIZE AND SHAPE OF SCARP AND FL AREAS COULD CHANGE TO ACCOUNT FOR CONDITIONS OBSERVED IN THE FIELD.
4. CLO TIES SHALL BE PROVIDED TO THE CONTRACTOR FOR CONSTRUCTION STAKING AND CLO TIES SHALL BE REINSURED.
5. ALL AREAS BEING REPAIRED SHALL BE FINISHED TO THE SAME GRADE AS THE EXISTING GRADINGS WITH TORSION AS SPECIFIED AND A MINIMUM OF INCHES OF SURFACE SOIL SHALL BE IN A LOOSE CONDITION.
6. IF SAND IS ENCOUNTERED DURING CONSTRUCTION OF SPILLOVER AREAS, CONTRACTOR SHALL OVEREXCAVATE A MINIMUM OF 2 FEET AND REPLACE WITH COMPACTED MUCK SOILS. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A MATERIAL FROM LOCAL SOURCE FOR CONSTRUCTION PRIOR TO SURFACE PREPARATION FOR SEEDING.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING WHEN EXISTING DITCHES/SOIL PLUG AREAS ARE NEEDED. DETERMINING SHALL BE CONDUCTED IN ACCORDANCE WITH THE DRAINAGE STANDARDS SPECIFICATIONS FOR CONSTRUCTION.
8. WHERE CULVERTS TO BE REMOVED, BANKS SHALL BE REGRAINED TO MATCH UPSTREAM AND DOWNSTREAM. WHERE CULVERTS ARE NOT TO BE REMOVED, REGRADING IS REQUIRED FOR FLAT CONSTRUCTION. CONSTRUCTION SHALL BE SURED UNIFORMITY IN NEARBY AREAS.



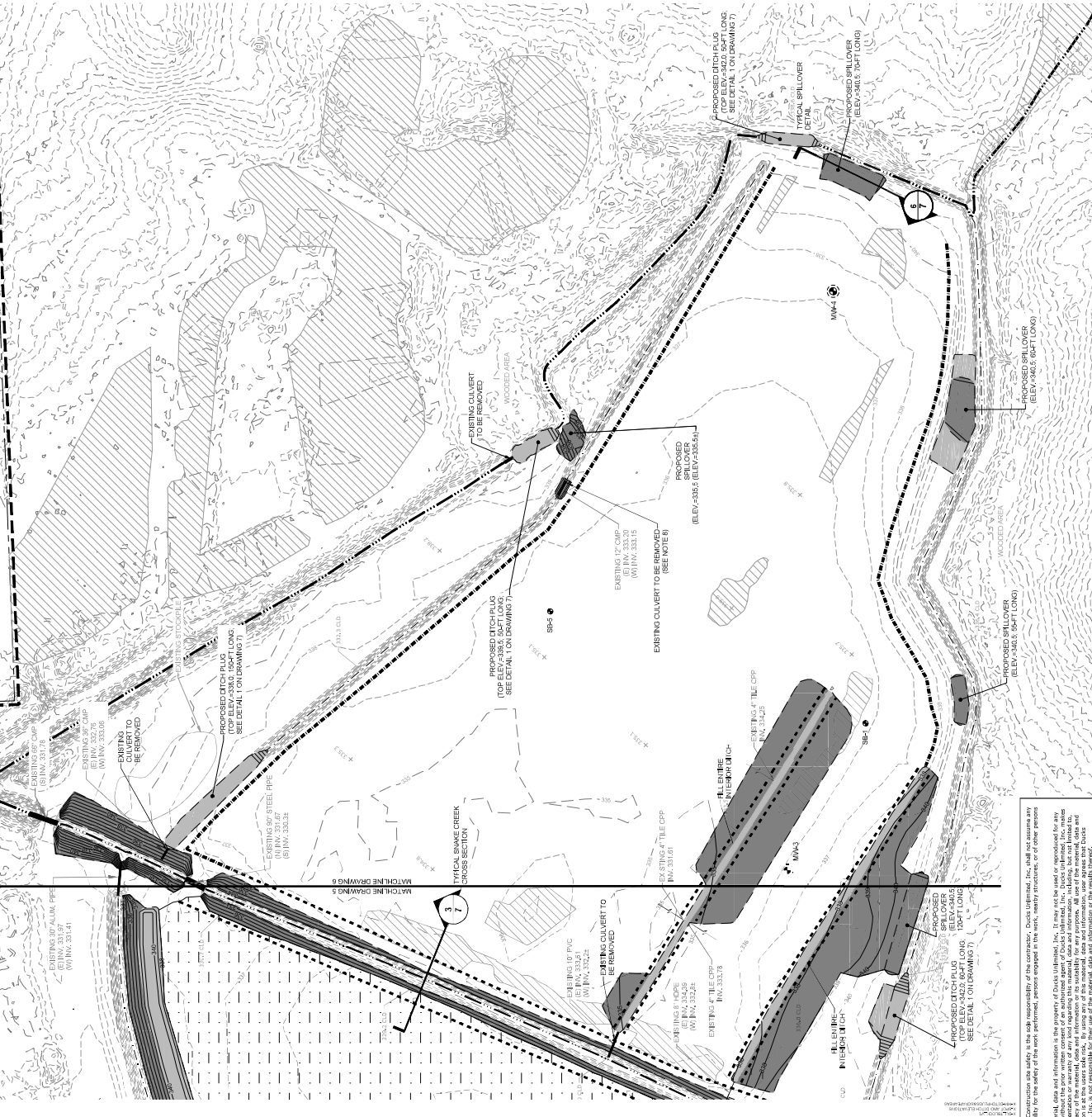
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FOR PERMIT



Professional Engineer's Name	State
THOMAS STEINER	IN
Professional Engineer's No.	00773

7/65

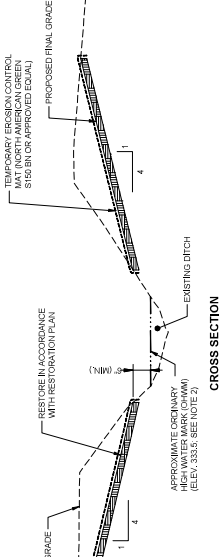
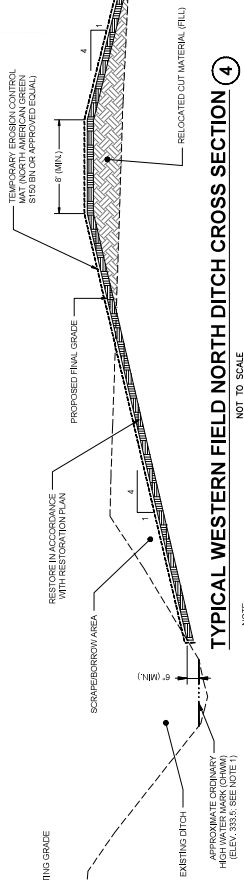


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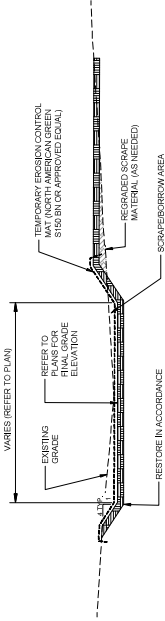
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PROFIL F

(ELEV. 333.5; SEE NOTE 1)



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 3
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 5
 6

D FILE:

5Y: 1024F

KLS

BY: GB &

MF (0)

DATE:

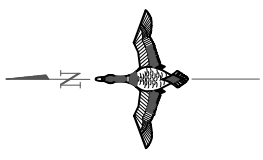
1707-815

-NY-235-

1999

57-1110-1

1



- LEGEND**
- EXISTING GRADE MAJOR CONTOUR (5' INTERVAL)
 - EXISTING GRADE MINOR CONTOUR (1' INTERVAL)
 - EXISTING ACCESS ROAD
 - PROPERTY LINE
 - EXISTING STREAM CENTERLINE
 - EXISTING DITCH CENTERLINE
 - CONSERVATION EASEMENT BOUNDARY (COINCIDENT WITH PROPERTY LINE)
 - APPROXIMATE LIMITS OF GRADING
 - PROPOSED FINAL GRADE CONTOUR (1' INTERVAL)
 - SILT FENCE (SEE DETAIL 1 ON DRAWING 9)
 - PROPOSED ACCESS ROUTE
 - FIBER ROLL (SEE DETAIL 2 ON DRAWING 9)
 - EXISTING DELUGATED WETLAND
 - EROSION CONTROL MAT

EROSION AND SEDIMENT CONTROL MATERIAL QUANTITIES		
MATERIAL	LENGTH	
SILT FENCE	322 LF	
FIBER ROLL	105 LF	
EROSION CONTROL MAT	100,500 SF	

- NOTES**
- SEE DRAWING 4 FOR ADDITIONAL BASEMAP INFORMATION.
 - ANY AREAS NOT REQUIRING THE CONTRACTOR THAT ARE NOT INDICATED ON THE PLANS (SUCH AS STAGING OR ACCESS) SHALL BE LEFT UNDISTURBED AND SHALL BE STABILIZED WITH NEED AND MULCH AT END OF USE, AT NO ADDITIONAL COST.
 - CONTRACTOR SHOULD AVOID HEAVY EQUIPMENT TRAVEL WITHIN DELUGATED WETLAND AREAS WHENEVER POSSIBLE. UNLESS OTHERWISE SPECIFIED, ALL EXPOSED ACTIVITIES SHALL BE STABILIZED WITHIN 14 DAYS OF COMPLETION.
 - CONTRACTOR TO COVER EXPOSED SLOPE WITH EROSION CONTROL MAT AS GRADING WORK PROGRESSES ALONG THE STREAM AND/OR DITCH AND/OR AT THE END OF EACH WORK DAY.
 - EROSION CONTROL MAT SHALL BE INSTALLED AND MAINTAINED ALONG WITH SILT FENCE ON THE DOWN GRADIENT SIDE.

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SKETCHED 6/20/2021

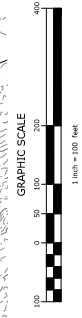
ARCADIS | **ARCADIS** OF NEW YORK, INC.
110 West Fayette Street, Suite 300
New York, NY 10013
Tel: 212.446.1325

PROJECT NUMBER: US-2021-2324
PROJECT NAME: MUCKY MARSH COMPENSATORY MITIGATION SITE
DRAWN BY: JF (DU)
CHECKED BY: JF (DU)
DATE: 6-18-2021

DESIGNED BY: JF (DU)
DESIGNED BY: JF (DU)
DESIGNED BY: JF (DU)

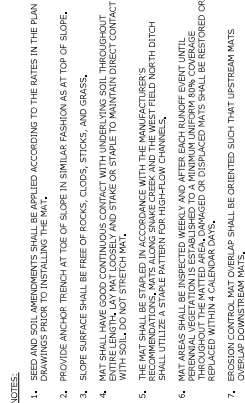
APPROVED BY: JF (DU)
APPROVED BY: JF (DU)
APPROVED BY: JF (DU)

THOMAS STEINER
Professional Engineer No. 3005018
State: NY



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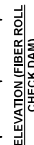
NOT TO SCALE



SECTION

- NOTES:
1. GEOTECHNICAL ENGINEER TO ADVISE REQUIRE TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR W/ANCHORS.
 2. WHEN TWO SECTIONS OF FENCING CLOTH ANCHOR TO EACH OTHER THEY SHALL BE OVERLAPPED SIX INCHES AND FOLDED APPROXIMATELY 10 TIMES. FENCING CLOTH SHALL BE EITHER FILTER # 10, MIFANT 100, STABILATOR 141400, OR APPROVED EQUIVALENT STAPLED. FILTER CLOTH SHALL BE EITHER FILTER # 10, MIFANT 100, STABILATOR 141400, OR APPROVED EQUIVALENT.
 3. THE INTEGRITY OF SILT FENCING SHALL BE MAINTAINED AND UNTIL ADEQUATE VEGETATIVE GROWTH IS ESTABLISHED.
 4. MATERIAL SHALL BE REMOVED WHENEVER BULGES DEVELOP IN THE SILT FENCE AT A MINIMUM 10' ACCUMULATIONS.

NOT TO SCALE



CHECK DAM



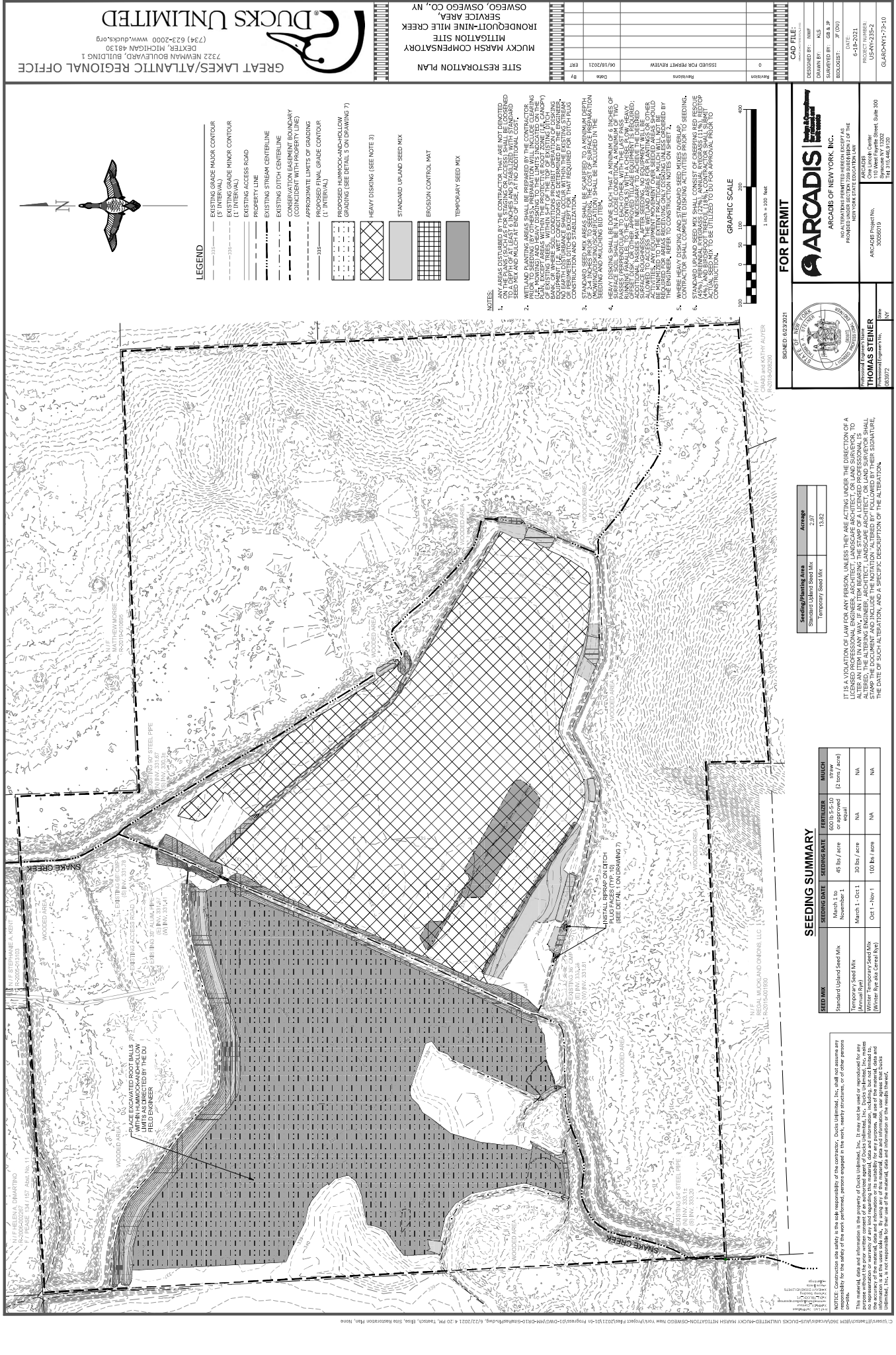
SECTION A-A

- NOTES:
1. CONTRACTOR TO PROVIDE PREFILLED FIBER ROLLS, MANUFACTURER INFORMATION ON FILL AND NETTING TO BE PROVIDED PRIOR TO START OF CONSTRUCTION.
 2. CONFIGURATION OF FIBER ROLL CHECK DAM NOT APPLICABLE IN ALL AREAS, REFER TO PLAN FOR REQUIRED LOCATIONS NOT LOCATED WITHIN DRAINAGE CHANNELS.

KEY POINT

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GREAT LAKES/ATLANTIC REGIONAL OFFICE
7322 NEWMAN BOULEVARD, BUILDING 1
DEXTER, MICHIGAN 48130
(734) 623-0000 www.ducksunlimited.com
DUCKS UNLIMITED

SITE RESTORATION PLAN
MUCKY MARSH COMPENSATORY
MITIGATION SITE
SERVICE AREA
OSWEGO, OSWEGO CO., NY

Revisions	Date	By
ISSUED FOR PERMIT REVIEW	06/18/2021	ERT

CAD FILE:	PROJECT NUMBER: US-2021-001
DESIGNED BY: JWP	PROJECT NAME: Mucky Marsh Compensation Site Mitigation
DRAWN BY: JWP	PROJECT LOCATION: 110 West Fayette Street, Suite 300, Oswego, NY 13127
SURVEYED BY: G&B #2	DATE: 6-18-2021
REVISIONS: JF G&B #2	PROJECT NUMBER: US-2021-001



FOR PERMIT

SEAL OF THE STATE OF NEW YORK

ARCADIS | 

ARCADIS OF NEW YORK, INC.

110 West Fayette Street, Suite 300
Oswego, NY 13127
PH: 315.339.8800 FAX: 315.339.8801
WWW.ARCADIS.COM

THOMAS STEINER

Professional Engineer No. 3005018

City of Oswego Engineer

110 West Fayette Street, Suite 300
Oswego, NY 13127
Tel: 315.446.1325

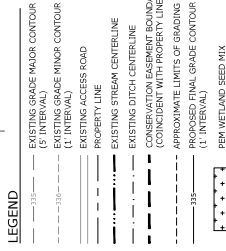
SEED MIX	SEEDING DATE	SEEDING RATE	FERTILIZER	MULCH
Standard Upland Seed Mix	March 1 to November 1	45 lbs / acre	600 lb 55-0-0 (N-P-K) equal	NA
Temporary Seed Mix	March 1 - Oct 1	30 lbs / acre	NA	NA
Winter Temporary Seed Mix	Oct 1 - Nov 1	100 lbs / acre	NA	NA

SEEDING SUMMARY

Seeding/Planting Area	Acreage
Standard Upland Seed Mix	2.87
Temporary Seed Mix	13.82

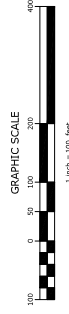
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NOTES: SEEDING PEM, PSS, PFO, AND UPLAND BUFFER

1. DUCKS UNLIMITED WILL PROVIDE AND APPLY THE WETLAND SEED MIX (MATERIAL SEED) FOR THE PEM, PSS, AND PFO AREAS TO BE SEEDDED. THE APPLICATION RATE IS 15-20 LB/AI.
2. REFER TO PLANTING NOTES AND DETAILS DRAWING FOR ADDITIONAL INFORMATION.



SIGNED - 6/23/2021



NO ALTERATIONS PERMITTED HEREON EXCEPT AS
PROVIDED UNDER SECTION 7209 SUBMISSION 2 OF THE

30056019
Syracuse NY 13202
Tel 315.446.9120

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Seedling/Planting Area	Average
PEM	5.71
PSS	1.69
PFO	8.60
PFO/Upland Buffer Mosaic	12.28
Standard Upland Seed Mix	2.97
Upland Buffer Plantings	5.72

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SEED MIXES/ TREE PLANTINGS

Target Use	Plant Species Common Name	Plant Species Scientific Name	Vegetation Associates Status	Percent Composition by Weight/Seeds per Acre	Propagula Type	Quantity/Acre
Wetland Seed Mix	For Sedge	<i>Carex lasiocarpa</i>	OB	25%		
	Virginia wild rice	<i>Echinochloa virginica</i>	FACW	15%		
	Lund Sedge	<i>Carex lasiocarpa</i>	OB	10%		
	Knapgrass	<i>Glycerhiza canadensis</i>	OB	5%		
	Bluejoint Grass	<i>Calamagrostis canadensis</i>	OB	5%		
	Broom Sedge	<i>Carex scoparia</i>	FACW	5%		
	Hop Sedge	<i>Carex lupulina</i>	OB	5%		
	Soft rush	<i>Juncus effusus</i>	OB	4%		
	Spotted Joe pye	<i>Eutrochium maculatum</i>	OB	4%		
	Blue vervain	<i>Verbena hastata</i>	FACW	3%		
	Bar Reed	<i>Sagittaria arifolia</i>	OB	2%		
	Eastern Bur. Reed	<i>Sagittaria arifolia</i>	OB	2%		
	Nodding bur	<i>Sagittaria arifolia</i>	OB	2%		
	Woods	<i>Sagittaria arifolia</i>	OB	2%		
	Swamp milkweed	<i>Asclepias incarnata</i>	OB	2%		
PFO	Silver maple	<i>Acer saccharum</i>	FAC	25		
	Swamp white oak	<i>Quercus bicolor</i>	FACW	50		
	Yellow birch	<i>Betula alleghaniensis</i>	FAC	50		
	American elm	<i>Ulmus americana</i>	FACW	50		
	Highbush blueberry	<i>Vaccinium corymbosum</i>	FACW	50		
	Wintersberry	<i>Ilex verticillata</i>	FACW	50		
	Sweet gale	<i>Myrica gale</i>	OB	25		
	Red cedar dogwood	<i>Cornus sericea</i>	FACW	25		
	Spicebush	<i>Lindera benzoin</i>	FACW	25		
	Arrowwood	<i>Wormland dentatum</i>	FAC	25		
	Silky dogwood	<i>Cornus amomum</i>	FACW	100		
	Red cedar dogwood	<i>Cornus sericea</i>	FACW	100		
	Silky willow	<i>Salix viminalis</i>	OB	100		
	Butternut	<i>Carya alba</i>	FACW	100		
	Red maple	<i>Acer rubrum</i>	FAC	100		
PSS	White pine	<i>Pinus strobus</i>	FACU	100		
	White pine	<i>Pinus strobus</i>	FACU	100		
	White pine	<i>Pinus strobus</i>	FACU	100		
	White pine	<i>Pinus strobus</i>	FACU	100		
	White pine	<i>Pinus strobus</i>	FACU	100		
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	White pine	<i>Pinus strobus</i>	FACU	100		
	White pine	<i>Pinus strobus</i>	FACU	100		
Upland Buffer	Quaking aspen	<i>Populus tremuloides</i>	FACU	100		
	White pine	<i>Pinus strobus</i>	FACU	100		
	Red cedar dogwood	<i>Cornus sericea</i>	FACW	100		
	Silky dogwood	<i>Cornus amomum</i>	FACW	100		
	Creeping red fescue	<i>Festuca rubra</i>	FACU	45%		
	Perennial ryegrass	<i>Lolium perenne</i>	FACU	22%		
	Annual ryegrass	<i>Lolium multiflorum</i>	FACU	11%		
	Redtop	<i>Agrostis gigantea</i>	FACW	4%		
	Brookfoot turf	<i>Lolium complanatum</i>	FACU	28%		
	Quaking aspen	<i>Populus tremuloides</i>	FACU	100		
	White pine	<i>Pinus strobus</i>	FACU	100		
	Red cedar dogwood	<i>Cornus sericea</i>	FACW	100		
	Silky dogwood	<i>Cornus amomum</i>	FACW	100		
	Creeping red fescue	<i>Festuca rubra</i>	FACU	45%		
	Perennial ryegrass	<i>Lolium perenne</i>	FACU	22%		
Standard Upland Seed Mix	Annual ryegrass	<i>Lolium multiflorum</i>	FACU	11%		
	Redtop	<i>Agrostis gigantea</i>	FACW	4%		
	Brookfoot turf	<i>Lolium complanatum</i>	FACU	28%		
	Quaking aspen	<i>Populus tremuloides</i>	FACU	100		
	White pine	<i>Pinus strobus</i>	FACU	100		
	Red cedar dogwood	<i>Cornus sericea</i>	FACW	100		
	Silky dogwood	<i>Cornus amomum</i>	FACW	100		
	Creeping red fescue	<i>Festuca rubra</i>	FACU	45%		
	Perennial ryegrass	<i>Lolium perenne</i>	FACU	22%		
	Annual ryegrass	<i>Lolium multiflorum</i>	FACU	11%		
	Redtop	<i>Agrostis gigantea</i>	FACW	4%		
	Brookfoot turf	<i>Lolium complanatum</i>	FACU	28%		
	Quaking aspen	<i>Populus tremuloides</i>	FACU	100		
	White pine	<i>Pinus strobus</i>	FACU	100		
	Red cedar dogwood	<i>Cornus sericea</i>	FACW	100		

NOTE:
1. PLANTINGS FOR PSS, PFO, AND UPLAND BUFFER WILL BE AT LEAST 18 INCHES IN HEIGHT.
SEEDLINGS WILL BE A MIXTURE OF BARE ROOT PLANTS (75%) AND POTTED (25%).
PLANTINGS FOR THE HUMMOCK-AND-HOLLOW AREA WILL BE 100% BARE ROOT.

FOR PERMIT

ARCADIS |

ARCADIS OF NEW YORK, INC.

100 West Fayette Street, Suite 300
New York, NY 10013
Tel: 212 446 1325

ARCADIS OF NEW YORK, INC.

100 West Fayette Street, Suite 300
New York, NY 10013
Tel: 212 446 1325

PROJECT NUMBER: 100-225-24

PROJECT NAME: MUCKY MARSH COMPENSATORY MITIGATION SITE

DATE: 6-18-2021

DESIGNED BY: JF

CHECKED BY: JF

SHRUB BY: JF

TREE BY: JF

DATE: 6-18-2021

PROJECT NUMBER: 100-225-24

PROJECT NAME: MUCKY MARSH COMPENSATORY MITIGATION SITE

DATE: 6-18-2021

DESIGNED BY: JF

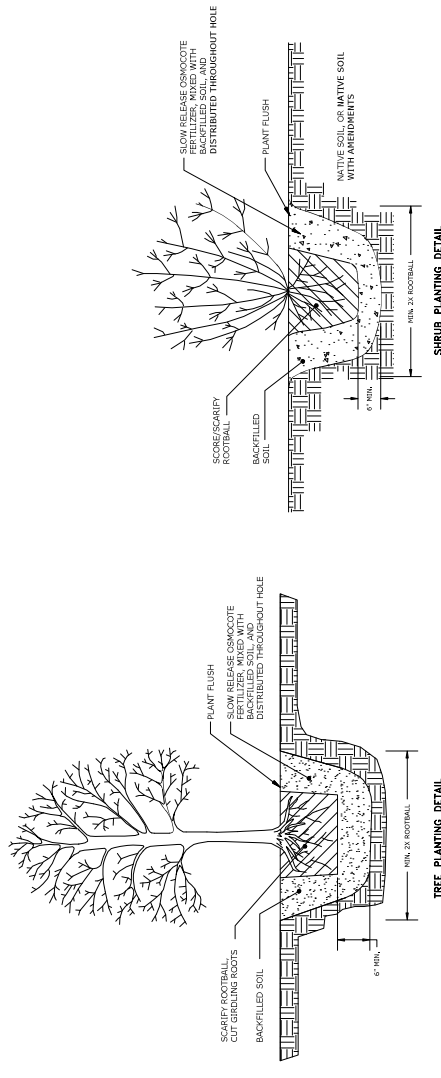
CHECKED BY: JF

SHRUB BY: JF

TREE BY: JF

NOTES: SEEDING PEM, PFO, AND UPLAND BUFFER

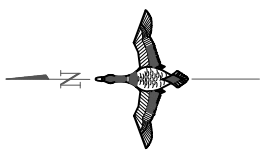
1. WETLAND AND UPLAND BUFFER PLANTING AND RESTORATION AREAS SHALL BE PREPARED PRIOR TO SEEDING. PREPARATION WILL INCLUDE CLEARING (I.E. MOWING) AND HEAVY DISKING OF ALL PLANTING AREAS. PLANTING SHALL BE COMPLETED BY THE DATES OF MARCH 1 AND NOVEMBER 1.
2. THE SEED APPLICATION RATE IS LISTED IN THE TABLE TO THE RIGHT. THE SEED MIX MAY BE MIXED WITH SAND/LOAM OR OTHER INERT FILLER APPROVED BY THE ENGINEER FOR EASE OF APPLICATION. WETLAND SEEDINGS SHALL BE COMPLETED BETWEEN THE DATES OF MARCH 1 AND NOVEMBER 1.



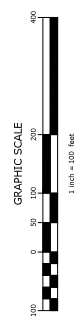
TREE AND SHRUB PLANTING DETAILS

NOTE:
1. TREE/SHRUB HOLE DIMENSIONS WILL BE DUG BASED ON ROOT BALL SIZE. THE TREE/SHRUB HOLE SHALL BE A MINIMUM OF 2\"/>

NOTICE: Construction site safety is the sole responsibility of the contractor. Ducks Unlimited, Inc. shall not assume any liability for the safety of the work performed, persons engaged in the work, nearby structures, or of other persons on the site. This material, data and information is the property of Ducks Unlimited, Inc. It may not be used or reproduced for any purpose without the prior written consent of Ducks Unlimited, Inc. Ducks Unlimited, Inc. does not warrant the accuracy of the material, data and information in its suitability for any purpose. All use of the material, data and information is at the user's risk. Ducks Unlimited, Inc. is not responsible for their use of the material, data and information or the results thereof.



- LEGEND**
- EXISTING GRADE MAJOR CONTOUR (5' INTERVAL)
 - EXISTING GRADE MINOR CONTOUR (1' INTERVAL)
 - EXISTING ACCESS ROAD
 - PROPERTY LINE
 - EXISTING STREAM CENTERLINE
 - EXISTING DITCH CENTERLINE
 - PROPOSED FINAL GRADE CONTOUR (1' INTERVAL)
 - CONSERVATION EASEMENT BOUNDARY (COINCIDENT WITH PROPERTY LINE)
 - APPROXIMATE LIMITS OF GRADING
- CREDIT GENERATION**
- P1M PRESERVATION AREA
AREA 0.96 AC
 - P1M REHABILITATION AREA
AREA 0.17 AC
 - P1M REESTABLISHMENT AREA
AREA 1.04 AC
 - P1S REHABILITATION AREA
AREA 0.11 AC
 - P1S REESTABLISHMENT AREA
AREA 1.38 AC
 - P1D PRESERVATION AREA
AREA 1.23 AC
 - P1D REHABILITATION AREA
AREA 0.23 AC
 - P1D REESTABLISHMENT AREA
AREA 1.07 AC
 - UPLAND BUFFER PRESERVATION AREA
AREA 511.6 AC
 - UPLAND BUFFER REHABILITATION AREA
AREA 5.72 AC
 - PRO/UPLAND BUFFER MOSAIC REHABILITATION AREA 12.28 AC
 - CROWN WATER
AREA 4.31 AC



FOR PERMIT

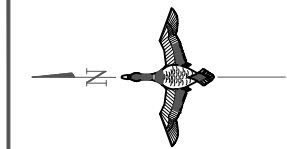
ARCADIS | **ARCADIS** |
ARCADIS OF NEW YORK, INC.
110 West Fayette Street, Suite 300
ROCHESTER, NY 14614
PHONE: 716.555.1000
FAX: 716.555.1001
WWW.ARCADIS.COM



















STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF LAND USE AND CONSERVATION
OFFICE OF PERMITS
110 West Fayette Street, Suite 300
ROCHESTER, NY 14614
PHONE: 716.555.1000
FAX: 716.555.1001
WWW.ARCADIS.COM

PROJECT NUMBER: US-22-24
PROJECT NAME: MUCKY MARSH COMPENSATORY MITIGATION SITE
DATE: 6-18-2021
DESIGNED BY: JF (DU)
CHECKED BY: JF (DU)
SURVEYED BY: JF (DU)
PROJECT LOCATION: 110 West Fayette Street, Suite 300
ROCHESTER, NY 14614
PROJECT NUMBER: 3005018
PROJECT NAME: MUCKY MARSH COMPENSATORY MITIGATION SITE
DATE: 6-18-2021
DESIGNED BY: JF (DU)
CHECKED BY: JF (DU)
SURVEYED BY: JF (DU)

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE MATERIAL, DATA AND INFORMATION IN THIS DOCUMENT. THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION, SHALL BE RECORDED IN THE PROJECT RECORDS.

NOTICE: Construction site safety is the sole responsibility of the contractor. Ducks Unlimited, Inc. shall not assume any liability for the safety of the work performed, persons engaged in the work, nearby structures, or of other persons or property. This material, data and information is the property of Ducks Unlimited, Inc. It may not be used or reproduced for any purpose without the prior written consent of the engineering or architectural firm. Ducks Unlimited, Inc. does not assume any responsibility for the accuracy of the material, data and information in this document for any purpose. All use of this material, data and information is at the user's risk. Ducks Unlimited, Inc. is not responsible for their use of the material, data and information or the results thereof.



LEGEND	
	EXISTING GRADE MAJOR CONTOUR (5' INTERVAL)
	EXISTING GRADE MINOR CONTOUR (1' INTERVAL)
	EXISTING ACCESS ROAD
	PROPERTY LINE
	EXISTING STREAM CENTERLINE
	EXISTING DITCH CENTERLINE
	CONSERVATION EASEMENT BOUNDARY (CONCURRENT WITH PROPERTY LINE)
	APPROXIMATE LIMITS OF GRAZING
	PROPOSED FINAL GRADE CONTOUR (1' INTERVAL)
	PHOTO POINT LOCATION
	MONITORING ACCESS PATH
	EXISTING MONITORING WELL
	FEM PLANTINGS AND WETLAND SEED
	PSS PLANTINGS AND WETLAND SEED
	PFO PLANTINGS AND WETLAND SEED
	PROPOSED BUFFER NODISCAL PLANTING AND WETLAND SEED MIX
	UPLAND BUFFER PLANTINGS
	STANDARD UPLAND SEED MIX

TYPICAL VIBI MONITORING PLOT
SCALE : 1" = 40m

100 SQUARE METER GRID FOR VEGETATION SAMPLING

50M

20M

2M

GRAPHIC SCALE

1 inch = 100 feet

FOR PERMIT

Appendix C. Cultural Resources Review



Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

December 02, 2020

John Fraser
Mitigation Specialist
Ducks Unlimited, Inc.
159 Dwight Park Circle
Suite 205
Syracuse, NY 13209

Re: USACE
Mucky Marsh Wetland Mitigation Project
Town of Oswego, Oswego County, NY
20PR07589

Dear John Fraser:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the National Environmental Policy Act and/or the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8).

Based upon this review, it is the opinion of the New York SHPO that no historic properties, including archaeological and/or historic resources, will be affected by this undertaking.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

A handwritten signature in black ink that reads "R. Daniel Mackay".

R. Daniel Mackay
Deputy State Historic Preservation Officer
Division for Historic Preservation

Appendix D. Threatened and Endangered Species Review



United States Department of the Interior

FISH AND WILDLIFE SERVICE

New York Ecological Services Field Office

3817 Luker Road

Cortland, NY 13045-9385

Phone: (607) 753-9334 Fax: (607) 753-9699

<http://www.fws.gov/northeast/nyfo/es/section7.htm>



In Reply Refer To:

January 22, 2021

Consultation Code: 05E1NY00-2021-SLI-1135

Event Code: 05E1NY00-2021-E-03692

Project Name: Mucky Marsh wetland mitigation

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This list can also be used to determine whether listed species may be present for projects without federal agency involvement. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list. If listed, proposed, or candidate species were identified as potentially occurring in the project area, coordination with our office is encouraged. Information on the steps involved with assessing potential impacts from projects can be found at: <http://www.fws.gov/northeast/nyfo/es/section7.htm>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the Services wind

energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the ESA. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New York Ecological Services Field Office

3817 Luker Road

Cortland, NY 13045-9385

(607) 753-9334

Project Summary

Consultation Code: 05E1NY00-2021-SLI-1135

Event Code: 05E1NY00-2021-E-03692

Project Name: Mucky Marsh wetland mitigation

Project Type: LAND - RESTORATION / ENHANCEMENT

Project Description: This project will restore and preserve a mosaic of drained mucklands and woodland by converting an onion agriculture operation back to native wetland habitats (forested, emergent, scrub shrub wetlands). The site is approximately 93 acres. Project would be constructed during 2022 growing season.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.405947600000005,-76.56367846527661,14z>



Counties: Oswego County, New York

Endangered Species Act Species

There is a total of 0 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Appendix E. Default and Closure Provisions

Default Provisions

If the IRT determines that the Sponsor is in material default of any provision of the Instrument or an approved mitigation plan, the IRT, acting through the USACE, shall provide notice of the specific circumstances or actions which constitute a default(s) in writing to the Sponsor and providing a reasonable period of time to cure the default. If the Sponsor does not remedy the default or provide a remedial action plan acceptable to the IRT in a timely manner, the USACE may take appropriate action. Such actions may include, but are not limited to, suspending credit sales, decreasing available credits, approving the use of funds at an alternate location, taking enforcement actions, calling upon financial assurances, or terminating the Instrument. In the event that the DU-NY-ILF program is terminated, DU is responsible for fulfilling any remaining obligations for credits sold. Default closure procedures for either the entire ILF Instrument or a specific service area may proceed within thirty (30) days upon written notification by either the Buffalo and New York District Engineers or Ducks Unlimited. In the event that either the ILF Instrument or a specific service area is closed, DU is responsible for fulfilling any remaining obligations for credits sold prior to closure unless the obligation is specifically transferred to another entity as agreed to by the District Engineer and DU. DU shall be reimbursed from the ILF program account for all costs incurred in fulfilling the remaining obligations. The Corps may review and approve use of these funds to purchase credits from another source of third-party mitigation or disburse funds to a governmental or non-profit natural resource management entity willing to undertake further compensation activities. The Corps itself cannot accept directly, retain, or draw upon those funds in the event of a default.

Instrument Closure Provisions

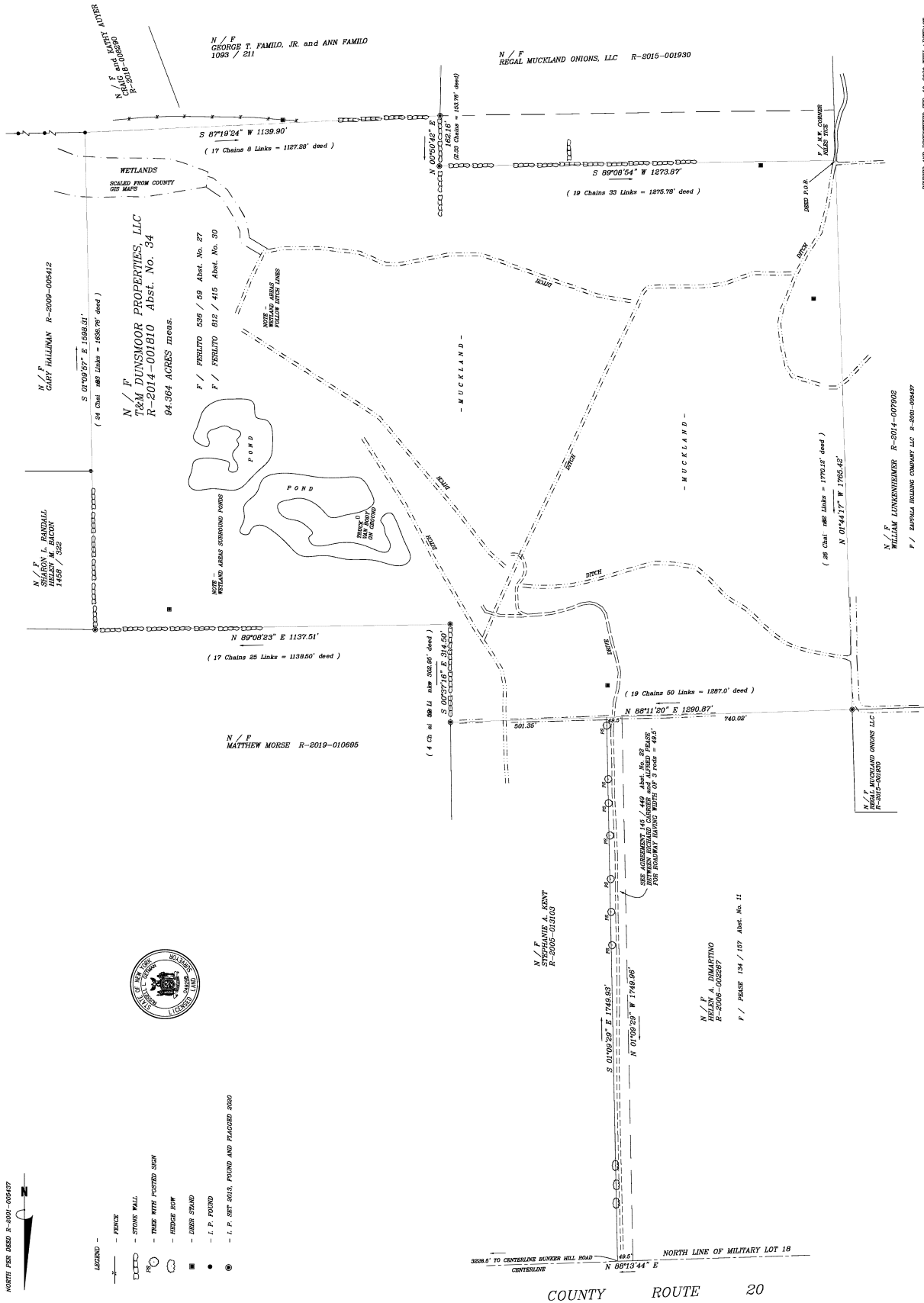
Any funds remaining in the program account after the mitigation obligations are satisfied must be used for the restoration and/or preservation of aquatic resources and associated upland buffers within the service area in which the funds reside unless otherwise approved by the District Engineer.

The final release of credits will take place once the IRT concurs that all the performance standards and obligations have been met and the final wetland delineation has been verified. The final number of mitigation credits will be based upon attainment of performance standards and a wetlands delineation completed by DU or its affiliates and verified by USACE following the final monitoring year. Final closure of the ILF Site will take place after all approved mitigation credits have been sold. DU shall continue to comply with the sale reporting requirements of the Instrument Amendment until such time as all credits have been sold. Should DU request the ILF Site be formally closed prior to sale of all released credits, the remaining unsold credits will be forfeited by the site and no further sales may occur.

NORTH FROM DEED R-2004-006412



- LEGEND -
- FENCE
 - STONE WALL
 - TREE WITH POSTED SIGN
 - FENCE ROW
 - DITCH
 - DITCH STRAND
 - L.P. POND
 - L.P. SET 2013 POND AND PLACED SIGN



TOWN OF OSWEGO, NEW YORK
MAY 17, 2024

PART OF FARM LOT 19
TOWN OF OSWEGO, NEW YORK
OSWEGO COUNTY, NEW YORK
RECEIVED AND RECORDED FEB. 16, 2024 WITH A RESERVATION
OF THE RIGHT OF FIRST REFUSAL TO THE TOWN OF OSWEGO
ON THE PART OF THE TOWN OF OSWEGO
SCALE 1" = 150'
DATE OCT. 21, 2023
FILE NO. 12345

RECORDED AND RECORDED FEB. 16, 2024 WITH A RESERVATION
OF THE RIGHT OF FIRST REFUSAL TO THE TOWN OF OSWEGO
ON THE PART OF THE TOWN OF OSWEGO
SCALE 1" = 150'
DATE OCT. 21, 2023
FILE NO. 12345

REFERENCES -
- MAP BY JOHN S. DAMIANO DATED JAN. 7, 2007 (HALLMAN)
- MAP BY THIS OFFICE DATED JAN. 25, 2008 FILE NO. 12345 (MORSE)

CHALLENGED LITERATURE OR LITERATURE TO A HONORARY
SUPPORT AND REASONING A LONGBOW LAND STATIONER
NEW YORK STATE REGISTRATION

ONLY COPIES OF THE ORIGINAL OF THIS SURVEY MAP
WITH A CORRECTION OF THE TOWN OF OSWEGO'S
WILD TRAIL CORNER